DS #: 3505-1

APN: 137-22-000-010

PROJECT: Summerlin Village 24 - Conceptual - Update

SUBMITTAL: 3rd

SCANNED BY/DATE:

CHECKED BY/DATE:

CITY OF LAS VEGAS
NEVADA

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM			DATE: June 24, 2014
TO: **Land Development Services** Department of Public Works			FROM: Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for: **Summerlin Village 24 – Conceptual - Update**		**COPIES TO:** G.C. Wallace
Cross Streets:	NWC of Charleston Boulevard at Red Rock Detention Basin		Howard Hughes Corp.
File Number:	F:\Depot\DSMEMOS\DS3505E.doc		Bart Anderson, P.E., DevCo
Parcel Number:	137-22-000-010		CCRFCD
Zoning Action:			CCPW
FEMA Flood Zone	YES	NO **X**	
Proposed Storm Drain	YES **X**	NO	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Trn. No.
1st Submittal	2/13/2004	2/27/2004	Not Approved	$400.00	119424: $400
2nd Submittal	3/19/2004	4/2/2004	Conditional Approval	$400.00	121560: $400
CCRFCD	5/18/2004	6/1/2004	Concurrence	N/C	N/C
CCPW	5/27/2004	6/10/2004	Concurrence	N/C	N/C
3rd Submittal	6/11/2014	6/24/2014	See Comments Below	$100.00	359768: $100
			TOTAL FEES (LDDRS):	**$900.00**	**----**

REMARKS:

3rd Submittal: Update to re-vitalize the conceptual drainage study for Summerlin Village 24

The Drainage Study for the subject project has been reviewed and:

X	is approved subject to conformance to all City standards and the following conditions:
	must be resubmitted or supplemented including the following:
	is conditionally approved subject to Clark County Regional Flood Control District concurrence.
	must have Clark County Department of Development Services concurrence

NOTE: Please be advised that all land surface area disturbances over 1 acre or any area adjacent to a water way must submit to the Nevada Division of Environmental Protection a "Notice of Intent" to discharge that certifies a stormwater pollution prevention plan has been developed and is maintained on site; for inclusion in the Stormwater General Permit No. NVR100000. A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. For more information, including forms and applications see http://ndep.nv.gov/bwpc/storm01.htm or call (775) 687-9429.

NOTE: Any future changes to the proposed design (or design assumptions) as outlined in the approved drainage study and attached preliminary grading plan which affect drainage must be addressed in a Drainage Study Amendment and accepted by the City of Las Vegas Flood Control Section. Additionally, conditional acceptance of a drainage study is valid for a period of one (1) year. If the proposed construction has not been completed in that time period, the City of Las Vegas reserves the right to require additional conditions and/or submission and acceptance of a complete drainage study update prior to further construction of a project.

END OF REMARKS
B&H/ays

T/R/S: T20S/R59E/22
AREA K-22

****
*** FAX TX REPORT ***
****

TRANSMISSION OK

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RESULT	OK

CITY OF LAS VEGAS **INTER-OFFICE MEMORANDUM**			**DATE:** June 24, 2014
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Parcel Number:	137-22-000-010		CCRFCD
Zoning Action:			CCPW
FEMA Flood Zone	YES	NO X	
Proposed Storm Drain	YES X	NO	

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CCPW	5/27/2004	6/10/2004	Concurrence	N/C	N/C
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UPDATE TO THE CONCEPTUAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 24

62024-320

June 2014

Prepared for:

The Howard Hughes Company, LLC
10801 W. Charleston Blvd., 3rd Floor
Las Vegas, Nevada 89135
Phone: (702) 791-4300
Fax: (702) 791-4450

62024.320

HYDROLOGIC CRITERIA AND DRAINAGE MANUAL

DRAINAGE STUDY INFORMATION FORM

Name of Development: Summerlin Village 24 Date: June 2014

Location of Development a) Descriptive (Cross Streets) North/South: Sky Vista Drive / Crossbridge Drive

East/West: Charleston Boulevard / Alta Drive

b) Section: 22 Township: 20S Range: 59E

c) APN: 137-33-801-001; 137-34-415-004 & -006; 137-34-416-097 & -098; 137-34-499-003 & -005; 164-03-111-002, -003, -004, & -005, 164-03-112-142, -143, -144 & -145; 164-03-112-147; 164-03-199-003, -004 & -005; 164-04-010-001; 164-04-099-004;

Name of Owner: The Howard Hughes Company, LLC.

Telephone No.: 791-4300 Fax No. 791-4450 E-Mail Address: Not available

Address: 10801 W. Charleston Blvd, 3rd Floor; Las Vegas, Nevada 89135

Contact Person-Name: Rachael R. Dennis, P.E. **Telephone No.:** (702) 804-2000

* **E-Mail Address:** Rdennis@gcwallace.com **Fax No.:** (702) 804-2299

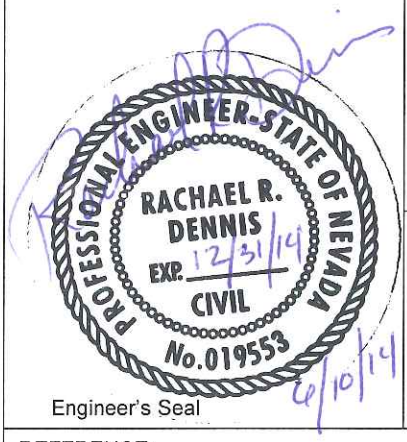
Firm: G. C. WALLACE COMPANIES

Address: 1555 S. Rainbow Blvd; Las Vegas, NV 89146

Type of Land Development/Land Disturbance

☐	Rezoning	☐	Subdivision Map	☐	Clearing and Grading Only
☐	Parcel Map	☐	Planned Unit Development	☒	Other (Please specify below)
☐	Large Parcel Map	☐	Building Permit	Conceptual Drainage Study	

1. Total Owned Land Area: At Site: 520 ± acres Being Developed/Disturbed: 0 ± acres
2. Is a portion or all of the subject property located in a designated FEMA Flood Hazard Area? ☐ **Yes**** ☒ **No**
3. Is the property bordered or crossed by an existing or proposed Clark County Regional Flood Control District Master Planned Facility? ☒ **Yes**** ☐ **No**
4. Proposed type of development (Residential, Commercial, Etc.): Residential, Commercial, and Parks (Open Space Areas)
5. Approximate upstream land area which drains to the subject site: 1 sq. mi ±
6. Has the site drainage been evaluated in the past? ☒ **Yes** ☐ **No** If yes, please identify documentation: Summerlin Vill. 24 Conceptual Study, GCW; Summerlin Vill. 24 Unit 1 Improvements Including Parcels "A" & "B" Mass Grading, GCW; Summerlin Vill. 24 Unit 2 Improvements, GCW; 2006 Summerlin West Planning Area Flood Control Master Plan, GCW; Summerlin Vill. 24 Unit 1 Improvements Including Parcels "A" & "B" Mass Grading, GCW; Summerlin Vill. 24 Parcel A, GCW; Summerlin Vill. 24 Parcel B, GCW; Summerlin Vill. 24 Sky Vista Drive, GCW;
7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: Existing Red Rock Detention Basin and an existing 30-inch RCP storm drain in Charleston Boulevard
8. Briefly describe your proposed schedule for the subject project: ASAP



Engineer's Seal

Submit this form as part of the required drainage study to the local entity which has jurisdiction over the subject property. This form may provide sufficient information to serve as the Conceptual Drainage Study.

*New Required Field

****Review and concurrence of the Clark County Regional Flood Control District is required.**

Local Entity File No.

Revision	Date

REFERENCE: STANDARD FORM 1

UPDATE TO THE CONCEPTUAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 24

62024-320

June 2014

Prepared for:

The Howard Hughes Company, LLC
10801 W. Charleston Blvd., 3rd Floor
Las Vegas, Nevada 89135
Phone: (702) 791-4300
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Prepared by:

G. C. Wallace Companies
1555 S. Rainbow Blvd.
Las Vegas, Nevada 89146
Phone: (702) 804-2000
Fax: (702) 804-2299

G. C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS

G. C. WALLACE, INC.
G. C. WALLACE OF CALIFORNIA, INC.
G. C. WALLACE HOLDINGS, INC.

Writer's Contact Information:

702.804.2248

62024-320

June 10, 2014

Albert Y. Sung, PE
Flood Control Project Manager
City of Las Vegas - Land Development Services
Department of Public Works
333 N. Rancho Drive
Las Vegas, Nevada 89106

Re: Conceptual Drainage Study for Summerlin Village 24

Dear Mr. Sung:

The purpose of this letter is to serve as the update to the Conceptual Drainage Study for the subject project. The *Conceptual Drainage Study for Summerlin Village 24* (hereinafter referred to as the Conceptual Study), was originally approved by the City of Las Vegas Public Works Department (CLV) on June 1, 2004, with concurrence from the Clark County Regional Flood Control District (CCRFCD) on May 14, 2004 and Clark County on May 4, 2004. The approved Conceptual Study presented ultimate conditions onsite drainage patterns and proposed major storm drain facilities within the exterior and interior roadways. Since approval of the study, the site plan and drainage design flow patterns for the parcels and proposed storm drain facilities have been revised. The calculations provided herewith serve to provide an ultimate condition for Village 24 and will supersede those of the Conceptual Study and serve to update the previously approved study. Pertinent reference materials from the Conceptual Study have been included in Appendix C. The methodologies and calculations presented in this report are in compliance with the *CCRFCD Hydrologic Criteria and Drainage Design Manual* (Manual). Copies of the approval letters have been included in Appendix C.

Since this is a conceptual study, this study only addresses existing and ultimate conditions. The interim conditions will be addressed in individual technical studies. It is not known at this time in what order the area will be developed. However, upon development, each area will be properly protected in the interim and ultimate conditions. It should be noted that several individual technical studies for roadways within Village 24 have been approved and will be updated according to this proposed Conceptual Study.

Existing conditions for the site were addressed in the *Update #2 to the Technical Drainage Study for Summerlin Village 24 Unit 1 Improvements including Parcels "A" & "B" Mass Grading* (hereinafter referred to as the Unit 1 Study). A copy of Figure 7 from the Unit 1 Study showing the existing conditions drainage patterns has been included in Appendix C. Presently, a portion of the onsite runoff from Village 24 is directed via existing washes to the existing graded channel in Sky Vista Drive, discharging to the existing 78-inch RCP lateral located north of the intersection of Sky Vista Drive and Desert Moon Road off the 8-foot wide by 8-foot high RCB storm drain system in Crossbridge Drive. Crossbridge Drive has also been rough graded approximately 3,200 linear feet west of the intersection of the existing Sky Vista Drive Collector Channel and Desert Moon Road. The existing 8-foot wide by 8-foot high RCB storm drain facility was constructed within Crossbridge Drive with the Unit 1 Study. Per the Unit 1 Study, channel/berms, gabion drop structures and additional stubs were provided to collect and convey the existing conditions flows. As shown on the referenced Unit 1 Study Figure 7, the following facilities collect the existing conditions flows from the natural washes: 1) the exposed 78-inch RCP lateral at the intersection of Sky Vista Drive and Desert Moon Road collects existing conditions flows generated west of the Sky Vista Drive collector channel and south of the existing detention basin; 2) the exposed 7-foot wide by 7-foot high RCB lateral at the existing gabion drop structures just west of the intersection of Sky Vista Drive and Crossbridge Drive; 3) the exposed 48-inch RCP lateral west of the gabion drop structures; 4) an existing roadside berm adjacent to the rough graded Crossbridge Drive on the north side directing existing conditions flows to the exposed 48-inch RCP lateral just west of the wash between the rough graded Parcels A and B; and 5) an existing channel/berm northwest of the rough graded Cross

Bridge Drive conveys existing conditions flows generated west of the site into the existing natural wash west of the rough graded Crossbridge Drive and ultimately southeast into the Red Rock Detention Basin. Pertinent reference materials have been included in Appendix C.

Additionally, the following technical drainage studies have also been referenced and included for in Appendix C:

- *Technical Drainage Study for Unit 2 Improvements* (hereinafter referred to as the Unit 2 Study)
  - CLV conditional approval June 9, 2014 – Study includes storm drain improvements within Crossbridge Drive, Suncreek Road, and Sky Vista Drive. Proposed offsite diversion structure at the upstream end of Parcel COS-1 and revised total flows diverted to Crossbridge Drive. Improvements not yet constructed.

- *Update #4 to the Technical Drainage Study for Summerlin Village 23A/23B Alta Drive Improvements* (hereinafter referred to as the V23B Alta Drive Study)
  - CLV approval October 8, 2013 – Study includes the full street improvements for Alta Drive east of the Sky Vista Collector Channel. East of the existing Sky Vista Collector Channel, the storm drain improvements within Alta Drive have been fully constructed. The roadway improvements are currently under construction.

- *Update #3 to the Technical Drainage Study for Summerlin Village 24 – Parcel A* (hereinafter referred to as the Parcel A Study)
  - CLV approval September 27, 2007 – Study includes full parcel development. Site is currently mass graded and the storm drain infrastructure has been constructed.

- *Technical Drainage Study for Clark County Design Engineering Services' Comments on the 2006 Summerlin West Planning Area Flood Control Master Plan Update* (hereinafter referred to as the 2006 Summerlin West MPU)
  - CLV approval April 13, 2007 – Study analyses full parcel development and established flowrates for discharge into the existing Red Rock Detention Basin.

- *Technical Drainage Study for Summerlin Village 24 – Parcel B* (hereinafter referred to as the Parcel B Study)
  - CLV approval February 4, 2005 – Study includes full parcel development. Site is currently mass graded and the storm drain infrastructure has been constructed.

- *Update to the Technical Drainage Study for Summerlin Village 23A/24 Sky Vista Drive Improvements* (hereinafter referred to as the Sky Vista Drive Study)
  - CLV approval June 11, 2004 – Study includes full street improvements for Sky Vista Drive between Desert Moon Road and Charleston Boulevard. Sky Vista Drive has been fully constructed.

- *Technical Drainage Study for Brownstone Diversion Berm* (hereinafter referred to as the Brownstone Berms Study)
  - CLV approval May 25, 2004 – Study includes diversion berms in the Summerlin West Planning Area to prevent breakout flow from the Brownstone Wash. The Brownstone Diversion Berms have been fully constructed.

The portion of the soils map containing Village 24 has been revised and has been included in Appendix A. The landuse and curve numbers for the onsite subbasins are consistent with the *2013 Las Vegas Valley Flood Control Master Plan Update* (hereinafter referred to as the 2013 MPU). The onsite ultimate conditions subbasins conservatively assume a landuse of Apartments/Condos/Industrial, Residential, Park/Open Space, Streets, and

Natural Desert Landscaping. In general, the proposed residential densities have been reduced. Weighted curve numbers for ultimate conditions were calculated. Curve numbers ranging from 81.5 to 94.0 were determined for the ultimate conditions onsite subbasins. Curve number calculations for ultimate conditions as well as a curve number matrix of each soil type for each landuse is included in Appendix A.

The ultimate conditions for this project assumes fully developed parcels within Village 24, full street improvements of the interior and exterior roadways, and offsites as fully developed. The offsite subbasins have been referenced from *2006 Summerlin West Planning Area Flood Control Master Plan* (hereinafter referred to as the 2006 Summerlin West MPU). The drainage patterns are generally consistent with the previously approved studies. Pertinent reference material has been included in Appendix C. Additionally, due to the site plan changes, concentration points have been relocated or renamed. Figure 6U depicts the overall subbasins and drainage patterns used in the ultimate conditions hydrologic analysis. Lag time calculations for the onsite drainage basin are included in Appendix A on Standard Form 4. The results of the HEC-1 model have been summarized in Table 1. A copy of the HEC-1 model has been included in Appendix A.

TABLE 1
ULTIMATE CONDITIONS HEC-1 SUMMARY

SB OR CP*	AREA (AC)	100 YR (CFS)	10 YR (CFS)
ALTA	9.8	35	18
-	-	-	-
7-2A	288.8	687	315
7-2B	60.4	182	82
7-5A	190.0	506	225
7-7A	51.8	153	70
A1	4.6	14	6
A2	34	100	47
B	30.5	90	43
C	25.2	62	25
CD1	4.2	15	8
CD2	3.1	10	5
CD3	1.3	6	3
COS-1	3.2	8	3
COS-2	2.7	6	2
COS-3	5.6	14	5
COS-4	10.2	23	8
COS-5	2.2	7	3
CP1	-	262	125
CP10	-	1030	452
CP10A	-	800	350
CP10B	-	155	63
CP11	-	1119	490
CP12	-	543	251
CP15	-	1023	479
CP16	-	1019	490
CP17	-	97	43
CP17A	-	81	35
CP18	-	1100	527

TABLE 1
ULTIMATE CONDITIONS HEC-1 SUMMARY

SB OR CP*	AREA (AC)	100 YR (CFS)	10 YR (CFS)
CP19	-	1168	559
CP2	-	354	164
CP3	-	356	165
CP5	-	408	192
CP6	-	435	204
CP7	-	595	274
CP8	-	949	446
CP9	-	120	51
CPA2	-	114	54
CPAD	-	40	21
CPSV2	-	23	12
CPSV3	-	25	12
CRR1	-	841	386
CRR2	-	720	313
CS-1	16.8	55	27
D	34.3	87	36
DIV1	-	287	132
E	23.9	63	26
F	37.8	92	36
FS1	-	554	255
G	42.6	100	39
H	22.1	58	24
I	38.7	102	43
J	43.6	110	46
K	29.6	80	34
L	15.5	53	26
M	22.0	73	36
NP-1	10.5	22	8
RETD1	-	287	132
SB1	3.6	14	8
SB2	1.3	5	3
SB3	3.5	13	7
SB4	0.5	2	1
ST1	1.1	5	2
ST2	9.6	33	17
ST4	6.0	22	12
ST6	1.8	8	4
SV1	3.6	14	8
SV2	2.1	9	4
SV3	2.7	11	6
WS-1	6.3	20	10

*See Figure 6U.

All proposed flood control facilities have been shown on Figure 8U. Design of the proposed storm drain facilities have been based on normal depth calculations. All proposed facilities have been sized to convey ultimate conditions flowrates. Proposed mainline and lateral pipe sizes were calculated using normal depth and have been upsized by 6 inches in diameter to provide for losses and future design flexibility. Revised normal depth calculations for the recommended facilities have been included in Appendix B. Note that detailed hydraulic analysis for the proposed facilities will be provided in future technical drainage study submittals upon site development of this project. Drop inlets will be located and sized with individual technical studies for future roadway improvements. A total of six mainline systems are existing or have been proposed with this project:

1) Proposed Crossbridge Drive North System – between Alta Drive and Suncreek Road;
2) Proposed Sky Vista Drive North System – between Alta Drive and Desert Moon Road (referenced from the Unit 2 Study);
3) Proposed Crossbridge Drive West System – from Parcel J to the existing natural wash Parcel COS-4 (referenced from the Unit 2 Study);
4) Existing Crossbridge Drive South System – from Sky Vista Drive to the south end of Parcel COS-5 (referenced from the Unit 1 Study);
5) Existing Sky Vista Drive Parcel A System – from Sky Vista Drive through Parcel A (referenced from the Parcel A Study);
6) Existing Sky Vista Drive South System – from Parcel A to Charleston (referenced from Sky Vista Drive Study).

Please refer to Figure 8U for facility flows and sizes.

In general, the approved drainage patterns are consistent with the previously approved referenced drainage studies and the proposed site plan and storm drain facilities do not significantly alter existing peak flows or the character of flows downstream of the development and do not pose any negative impacts on downstream facilities and development.

If you have any questions or require additional information, please contact our office at 804-2000.

Cordially,

G. C. WALLACE, INC.

Rachael R. Dennis, PE
Project Manager
Flood Control Division

rrd/vlr

c: Chris Anderson, THHC
Josh Johnson, GCW
Vicki Marjerrison, GCW
Ryan Belsick, GCW

UPDATE TO THE CONCEPTUAL DRAINAGE STUDY FOR
SUMMERLIN VILLAGE 24
APPENDIX LAYOUT

Appendix A. Hydrologic Calculations and Information

1. Figure 6U – Ultimate Conditions Drainage Basin Map
2. Figure 8U – Drainage Facilities Map - Ultimate Conditions
3. Soils Exhibit
4. Rainfall Exhibit
5. Table 602A from the CCRFCD Manual
6. Table 602 1 of 4 from the CCRFCD Manual
7. Composite Curve Number Calculations
8. Ultimate Conditions Standard Form 4
9. Ultimate Conditions HEC-1 Model

Appendix B. Hydrologic Calculations and Information

1. Normal Depth Calculations
2. Inlet Control Calculation

Appendix C. Referenced Materials (On CD)

1. Land Use Concept

2. Summerlin Village 24 Unit 2
   a) CLV Conditional Approval Letter
   b) Ultimate Conditions Standard Form 4
   c) Ultimate Conditions HEC-1 Model
   d) Figure 5R – Ultimate Condition Drainage Map
   e) Figure 7AR – Interim Condition Drainage Map
   f) Improvement Plans

3. Summerlin Villages 23A/23B Alta Drive Improvements (Fox Hill to Sky Vista)
   a) CLV Approval Letter
   b) Figure 5 – Proposed Conditions Drainage Basin Map
   c) Sheets 1 & 10

4. 2013 Las Vegas Valley Flood Control Master Plan Update
   a) Figure F-29 – Flood Control Facilities/Facility Inventory
   b) Figure H-29 – Hydrologic Summary
   c) Flamingo/Tropicana Watershed Standard Form 4
   d) Flamingo/Tropicana Watershed HEC-1 Model

5. 2006 Summerlin West Planning Area Flood Control Master Plan
   a) CLV Approval Letter
   b) Redrock Standard Form 4
   c) Redrock Watershed HEC-1 Model
   d) Figure 5 – Overall Proposed Drainage Map
   e) Figure 9B – Proposed Condition Drainage Map: Red Rock Detention Basin Tributary
   f) Conceptual Land Use Plan

6. Summerlin Village 24 – Parcel A
    a) CLV Approval Letter
    b) Figure 5R – Proposed Conditions Drainage Map
    c) Proposed Conditions Standard Form 4
    d) Proposed Conditions HEC-1 Model
    e) Improvement Plans

7. Summerlin Village 24 Unit 1 improvements including Parcels "A" and "B" Mass Grading
    a) CLV Approval Letter
    b) Figure 5R – Drainage Plan for Drop Inlet Sizing
    c) Figure 6 – Proposed Facilities Drainage Map
    d) Figure 7 – Interim Conditions Drainage Map
    e) Proposed Conditions Standard Form 4
    f) Proposed Conditions HEC-1 Model
    g) Improvement Plans

8. Summerlin Village 24 – Parcel B
    a) CLV Approval Letter
    b) Proposed Conditions Standard Form 4
    c) Proposed Conditions HEC-1 Model
    d) Figure 5 – Ultimate Conditions Drainage Map
    e) Improvement Plans

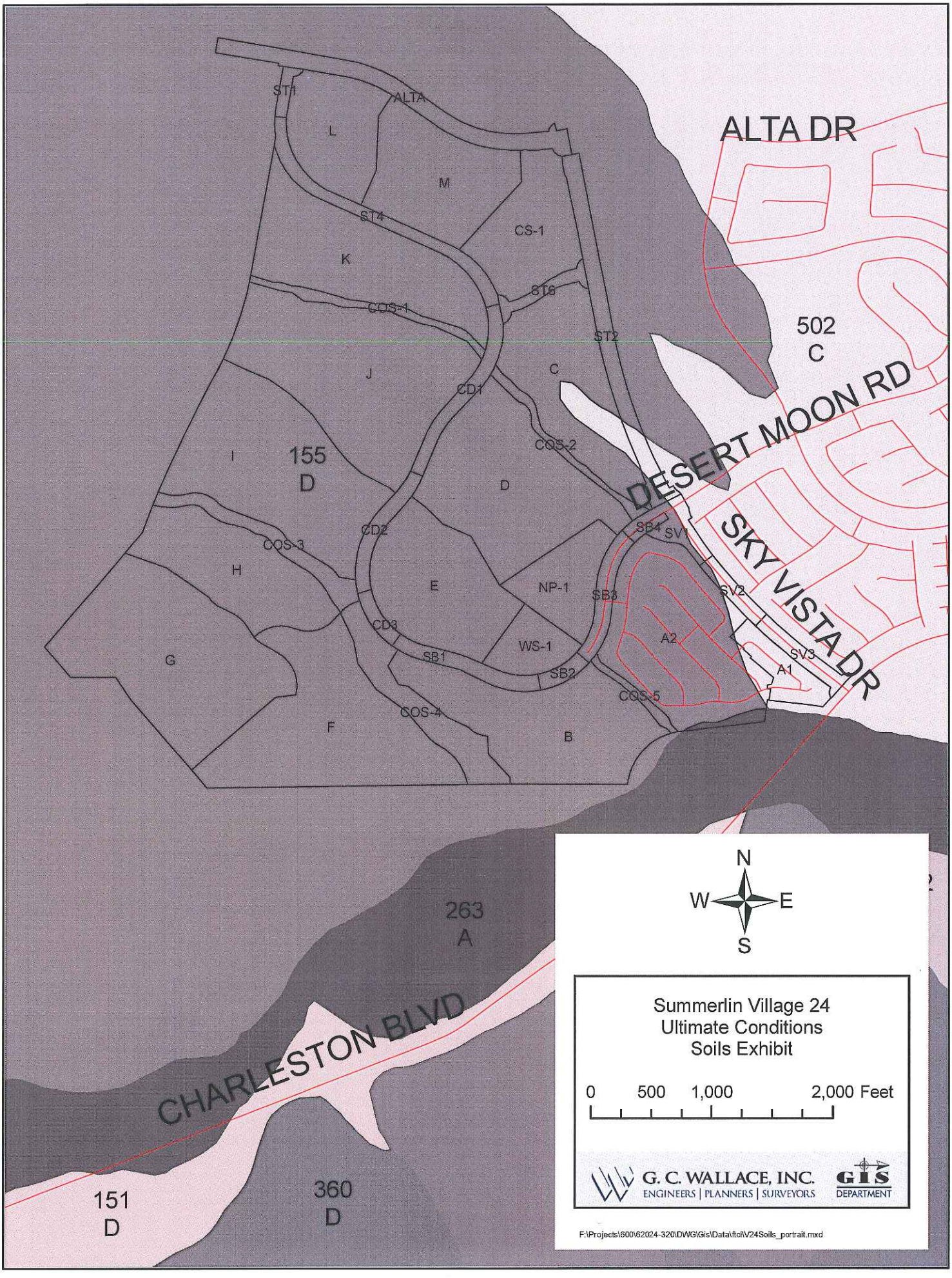
9. Summerlin Village 23A/24 Sky Vista Drive Improvements
    a) CLV Approval Letter
    b) Text excerpt describing intersection grading and drop inlet collection
    c) Figure R-5R: Proposed Conditions Drainage Map
    d) Proposed Conditions Standard Form 4
    e) Proposed Conditions HEC-1 Model
    f) Improvement Plans

10. Brownstone Diversion Berm
    a) CLV Approval Letter
    b) Exhibit - Location Map

11. Summerlin Village 24 (Conceptual)
    a) CLV Approval Letter
    b) CCDDS Concurrence Letter
    c) CCRFCD Concurrence Letter
    d) Figure 5 – Existing Conditions Drainage Map
    e) Figure 6 – Ultimate Conditions Drainage Map
    f) Figure 8 – Proposed Facilities Drainage Map
    g) Soil Exhibit
    h) CN Calculations
    i) Ultimate Conditions Standard Form 4
    j) Ultimate Conditions HEC-1 Model

APPENDIX A

Hydrologic Calculations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Summerlin Village 24
Ultimate Conditions
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ENGINEERS | PLANNERS | SURVEYORS
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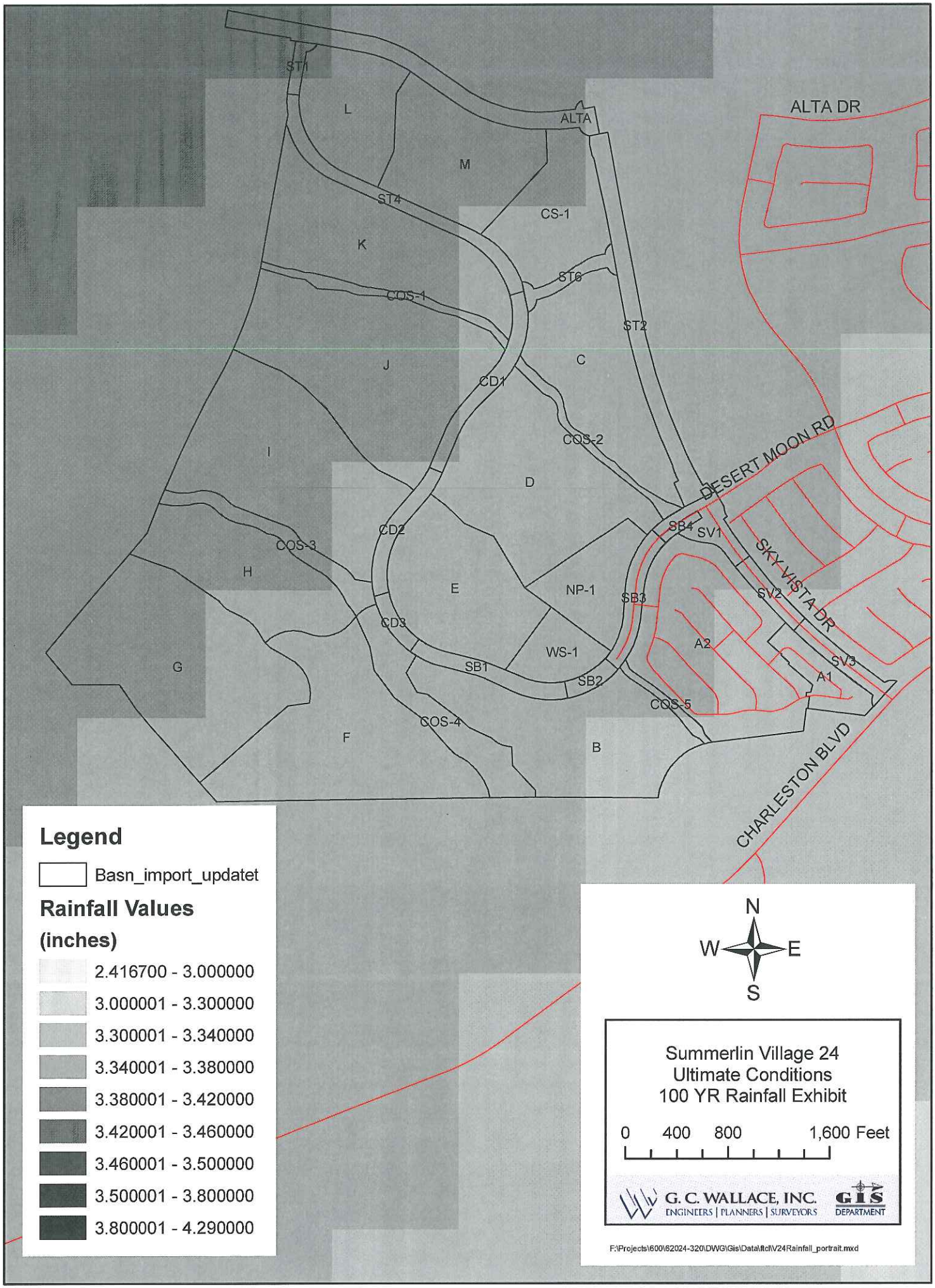
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SV1
CD2
COS-3
SKY VISTA DR
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SV2
CD3
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COS-4
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S
Summerlin Village 24
Ultimate Conditions
100 YR Rainfall Exhibit
0
400
800
1,600 Feet
G. C. WALLACE, INC.
ENGINEERS | PLANNERS | SURVEYORS
GIS
DEPARTMENT
F:\Projects\600\62024-320\DWG\Gis\Data\ftcl\V24Rainfall_portrait.mxd

RUNOFF CURVE NUMBERS - RESIDENTIAL DISTRICTS

Average Lot Size or Usage[1]	Percent Impervious[2]	Curve Number for Hydrologic Soil Groups			
		A	B	C	D
Apartments/Condos	72	81	88	91	93
Townhouses/6,000 sq ft lots or less[3]	69	80	87	90	92
7,000 sq ft lots	63	76	84	89	91
8,000 sq ft lots	58	73	82	88	90
10,000 sq ft lots	38	61	75	83	87
14,000 sq ft lots	30	57	72	81	86
20,000 sq ft lots	25	54	70	80	85
40,000 sq ft lots	20	51	68	79	84
80,000 sq ft lots	12	46	65	77	82

1 Lot size should represent the size of the average lot and not the gross acreage divided by the number of lots.

2 Actual percent impervious value should be compared to selected land use type.

3 In cases where average residential lots are smaller than 6,000 sq ft, commercial/business/industrial land use should be used.

Revision	Date

REFERENCE:

TABLE 602A

RUNOFF CURVE NUMBERS
(URBAN AREAS[1])

Cover description		Curve numbers for hydrologic soil group—			
Cover type and hydrologic condition	Average percent impervious area[2]	A	B	C	D
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.)[3]:					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only)[4]		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
See Table 602A					
Developing urban areas					
Newly graded areas (pervious areas only, no vegetation)[5]		77	86	91	94

1 Average runoff condition, and $I_a = 0.2S$.

2 The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system. Impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using Figure 603.

3 CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

4 Composite CN's for natural desert landscaping should be computed using Figure 603 based on the impervious area percentage (CN #98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

5 Composite CN's to use for the design of temporary measures during grading and construction should be computed using Figure 603 based on the degree of development impervious area percentage) and the CN's for the newly graded pervious areas.

Revision	Date

Summerlin Village 24

Composite Curve Number Calculations

G.C. Wallace, Inc.
Date:5/19/14
File: CNcalcs.xls
By: rrd/dbc

Hydrologic Soil Group	Apartments/ Condos/ Industrial	Residential (<6,000 ft2 lots)*	Residential (7,000 ft2 lots)	Residential (10,000 ft2 lots)	Residential (14,000 ft2 lots)	Residential (20,000 ft2 lots)	Natural Desert Landscaping	Streets (Paved)	Park/Open Space (fair, grass 50-75%)
A	81	81	76	61	57	54	63	98	49
B	88	88	84	75	72	70	77	98	69
C	91	91	89	83	81	80	85	98	79
D	93	93	91	87	86	85	88	98	84

** - Average residential lots with <6,000 sq ft an Industrial land use was used from Table 602 in the CCRFCD HCDDM
** - CN Values were referenced from Table 602A in the CCRFCD HCDDM

SOIL 155 Cave (gravelly fine sandy loam)

Description	Type	%	Apartments/ Condos/ Industrial	Residential (<6,000 ft2 lots)*	Residential (7,000 ft2 lots)	Residential (10,000 ft2 lots)	Residential (14,000 ft2 lots)	Residential (20,000 ft2 lots)	Natural Desert Landscaping	Streets (Paved)	Park/Open Space (fair, grass 50-75%)
Arizo	A	5%	81	81	76	61	57	54	63	98	49
Caliza	B	5%	88	88	84	75	72	70	77	98	69
Cave	D	90%	93	93	91	87	86	85	88	98	84
Composite CN		100%	92.2	92.2	89.9	85.1	83.9	82.7	86.2	98.0	81.5

SOIL 263 Jean Complex (2 to 4 percent slopes)

Description	Type	%	Apartments/ Condos/ Industrial	Residential (<6,000 ft2 lots)*	Residential (7,000 ft2 lots)	Residential (10,000 ft2 lots)	Residential (14,000 ft2 lots)	Residential (20,000 ft2 lots)	Natural Desert Landscaping	Streets (Paved)	Park/Open Space (fair, grass 50-75%)
Jean	A	95%	81	81	76	61	57	54	63	98	49
Goodsprings	D	5%	93	93	91	87	86	85	88	98	84
Composite CN		100%	81.6	81.6	76.8	62.3	58.5	55.6	64.3	98.0	50.8

SOIL 502 Canutio-Cave (gravelly fine sandy loam)

Description	Type	%	Apartments/ Condos/ Industrial	Residential (<6,000 ft2 lots)*	Residential (7,000 ft2 lots)	Residential (10,000 ft2 lots)	Residential (14,000 ft2 lots)	Residential (20,000 ft2 lots)	Natural Desert Landscaping	Streets (Paved)	Park/Open Space (fair, grass 50-75%)
Arizo	A	5%	81	81	76	61	57	54	63	98	49
Canutio	B	55%	88	88	84	75	72	70	77	98	69
Cave	D	40%	93	93	91	87	86	85	88	98	84
Composite CN		100%	89.7	89.7	86.4	79.1	76.9	75.2	80.7	98.0	74.0

Summerlin Village 24 Conceptual Drainage Study					
WEIGHTED CURVE NUMBERS VALUES					
Ultimate Conditions					
Basin	Soil	Percent	CN	Land Use	WCN
A1	155	0.5%	89.9	Residential (7,000 ft2 lots)	86.4
	502	99.5%	86.4		
A1	Res	90.0%	86.4		87.6
	Streets	10.0%	98.0		
A2	155	91.9%	89.9	Residential (7,000 ft2 lots)	89.3
	263	3.0%	76.8		
	502	5.1%	86.4		
A2	Res	90.0%	89.3		90.2
	Streets	10.0%	98.0		
B	155	90.0%	89.9	Residential (7,000 sq ft lots)	90.7
	155	10.0%	98.0	Streets (Paved)	
C	155	86.9%	85.1	Residential (10,000 ft2 lots)	84.3
	502	13.1%	79.1		
C	Res	90.0%	84.3		85.7
	Streets	10.0%	98.0		
D	155	90.0%	85.1	Residential (10,000 sq ft lots)	86.4
	155	10.0%	98.0	Streets (Paved)	
E	155	90.0%	85.1	Residential (10,000 sq ft lots)	86.4
	155	10.0%	98.0	Streets (Paved)	
F	155	90.0%	82.7	Residential (20,000 sq ft lots)	84.2
	155	10.0%	98.0	Streets (Paved)	
G	155	90.0%	82.7	Residential (20,000 sq ft lots)	84.2
	155	10.0%	98.0	Streets (Paved)	
H	155	90.0%	83.9	Residential (14,000 sq ft lots)	85.3
	155	10.0%	98.0	Streets (Paved)	
I	155	90.0%	85.1	Residential (10,000 sq ft lots)	86.4
	155	10.0%	98.0	Streets (Paved)	
J	155	90.0%	85.1	Residential (10,000 sq ft lots)	86.4
	155	10.0%	98.0	Streets (Paved)	
K	155	90.0%	85.1	Residential (10,000 sq ft lots)	86.4
	155	10.0%	98.0	Streets (Paved)	
L	155	100.0%	92.2	Apartment Condos/Industrial	92.2
M	155	100.0%	92.2	Residential (<6,000 sq ft2 lots)	92.2
CS-1	155	100.0%	92.2	Apartment Condos/Industrial	92.2
NP-1	155	100.0%	81.5	Park/Open Space (Fair Condition)	81.5
WS-1	155	100.0%	92.2	Apartment Condos/Commercial	92.2
ALTA	155	60.0%	98.0	Streets (Paved)	94.0
	155	40.0%	88.0	Natural Desert Landscape	
CD1	155	60.0%	98.0	Streets (Paved)	94.0
	155	40.0%	88.0	Natural Desert Landscape	
CD2	155	60.0%	98.0	Streets (Paved)	94.0
	155	40.0%	88.0	Natural Desert Landscape	
CD3	155	60.0%	98.0	Streets (Paved)	94.0
	155	40.0%	88.0	Natural Desert Landscape	
SB1	155	60.0%	98.0	Streets (Paved)	94.0
	155	40.0%	88.0	Natural Desert Landscape	
SB2	155	60.0%	98.0	Streets (Paved)	94.0
	155	40.0%	88.0	Natural Desert Landscape	

Summerlin Village 24 Conceptual Drainage Study					
WEIGHTED CURVE NUMBERS VALUES					
Ultimate Conditions					
Basin	Soil	Percent	CN	Land Use	WCN
SB3	155	60.0%	98.0	Streets (Paved)	94.0
	155	40.0%	88.0	Natural Desert Landscape	
SB4	155	60.0%	98.0	Streets (Paved)	94.0
	155	40.0%	88.0	Natural Desert Landscape	
ST1	155	60.0%	98.0	Streets (Paved)	94.0
	155	40.0%	88.0	Natural Desert Landscape	
ST2	155	60.0%	98.0	Streets (Paved)	94.0
	155	40.0%	88.0	Natural Desert Landscape	
ST4	155	60.0%	98.0	Streets (Paved)	94.0
	155	40.0%	88.0	Natural Desert Landscape	
ST6	155	60.0%	98.0	Streets (Paved)	94.0
	155	40.0%	88.0	Natural Desert Landscape	
SV1	155	60.0%	98.0	Streets (Paved)	94.0
	155	40.0%	88.0	Natural Desert Landscape	
SV2	155	60.0%	98.0	Streets (Paved)	94.0
	155	40.0%	88.0	Natural Desert Landscape	
SV3	155	60.0%	98.0	Streets (Paved)	94.0
	155	40.0%	88.0	Natural Desert Landscape	
COS-1	155	100.0%	81.5	Park/Open Space (Fair Condition)	81.5
COS-2	155	100.0%	81.5	Park/Open Space (Fair Condition)	81.5
COS-3	155	100.0%	81.5	Park/Open Space (Fair Condition)	81.5
COS-4	155	100.0%	81.5	Park/Open Space (Fair Condition)	81.5
COS-5	155	100.0%	81.5	Park/Open Space (Fair Condition)	81.5

HYDROLOGIC CRITERIA AND DESIGN MANUAL

TIME OF CONCENTRATION

G. C. WALLACE COMPANIES
Engineers/Planners/Surveyors

SUMMERLIN VILLAGE 24
CONCEPTUAL DRAINAGE STUDY UPDATE
ULTIMATE CONDITIONS

Project No: 62024-320
Date: 8-May-14
Calculated by: dbc

SUB-BASIN DATA						INITIAL / OVERLAND TIME (Ti)			TRAVEL TIME (Tt)					Tc CHECK URBANIZED BASINS		Tc	Tlag	REMARKS
DESIG:	DEV./EX. (D or E)	CN	K	AREA Ac	AREA Sq Mi	INITIAL LENGTH Feet	SLOPE %	Ti Min	TRAVEL LENGTH Feet	SLOPE %	V1 VELOCITY fps	V2 VELOCITY fps	Tt Min	TOTAL LENGTH Feet	Tc = (L/180)+10 Min	Min	Tlag = 0.6Tc/60 Hours	Remarks: 100 yr Precip
(1)		(16)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(14)	(15)	
A1	D	87.6	0.7663	4.6	0.00714	100	1.0	6.0	840	4.7	4.4	6.6	2.8	940	15.2	8.8	**0.088**	3.33
A2	D	90.2	0.8006	34.0	0.05306	100	1.0	5.4	2270	2.3	3.1	4.6	9.1	2370	23.2	14.5	**0.145**	3.34
B	D	90.7	0.8072	30.0	0.04683	120	1.0	5.8	2175	4.6	4.3	6.6	6.2	2295	22.8	11.9	**0.119**	3.35
C	D	85.7	0.7412	25.2	0.03938	150	1.0	7.9	2580	3.2	3.6	5.5	8.6	2730	25.2	16.5	**0.165**	3.37
D	D	86.4	0.7505	34.3	0.05366	150	1.0	7.7	2595	3.3	3.7	5.6	8.6	2745	25.3	16.3	**0.163**	3.36
E	D	86.4	0.7505	23.9	0.03739	150	1.0	7.7	2275	3.8	3.9	6.0	7.1	2425	23.5	14.8	**0.148**	3.37
F	D	84.2	0.7214	37.8	0.05913	200	1.0	9.6	2218	6.3	5.1	7.7	5.4	2418	23.4	15.0	**0.150**	3.37
G	D	84.2	0.7214	42.6	0.06655	200	1.0	9.6	2491	4.4	4.2	6.4	7.1	2691	25.0	16.8	**0.168**	3.39
H	D	85.3	0.7360	22.1	0.03449	160	1.0	8.3	1759	7.1	5.4	8.2	4.1	1919	20.7	12.4	**0.124**	3.39
I	D	86.4	0.7505	38.7	0.06047	150	1.0	7.7	2458	4.5	4.3	6.5	7.0	2608	24.5	14.7	**0.147**	3.39
J	D	86.4	0.7505	43.6	0.06819	150	1.0	7.7	2935	3.6	3.8	5.8	9.2	3085	27.1	16.9	**0.169**	3.39
K	D	86.4	0.7505	29.6	0.04618	150	1.0	7.7	1771	4.8	4.4	6.7	5.0	1921	20.7	12.7	**0.127**	3.39
L	D	92.2	0.8270	15.5	0.02427	100	1.0	4.9	1275	2.6	3.3	4.9	5.2	1375	17.6	10.1	**0.101**	3.41
M	D	92.2	0.8270	22.0	0.03445	100	1.0	4.9	1765	3.6	3.8	5.8	5.8	1865	20.4	10.7	**0.107**	3.40
CS-1	D	92.2	0.8270	16.8	0.02631	100	1.0	4.9	1475	2.6	3.3	4.9	5.9	1575	18.8	10.8	**0.108**	3.38
NP-1	D	81.5	0.6858	10.5	0.01648	200	1.0	10.5	1055	1.6	2.6	3.9	5.7	1255	17.0	16.2	**0.162**	3.35
WS-1	D	92.2	0.8270	6.3	0.00988	100	1.0	4.9	1320	1.6	2.6	3.9	6.8	1420	17.9	11.7	**0.117**	3.36
ALTA	D	94.0	0.8508	9.8	0.01533	30	2.0	2.0	3090	5.4	4.7	7.1	7.8	3120	27.3	9.8	**0.098**	3.41
CD1	D	94.0	0.8508	3.7	0.00570	25	2.0	1.8	870	0.6	1.6	2.4	7.9	895	15.0	9.7	**0.097**	3.38
CD2	D	94.0	0.8508	3.6	0.00569	25	2.0	1.8	1100	0.6	1.6	2.4	9.5	1125	16.3	11.3	**0.113**	3.37
CD3	D	94.0	0.8508	1.3	0.00209	35	2.0	2.1	490	6.3	5.1	7.7	1.6	525	12.9	3.7	**0.050**	3.36
SB1	D	94.0	0.8508	3.6	0.00566	60	2.0	2.8	1310	5.9	4.9	7.4	3.5	1370	17.6	6.3	**0.063**	3.36
SB2	D	94.0	0.8508	1.3	0.00200	60	2.0	2.8	414	2.1	2.9	4.4	2.4	474	12.6	5.1	**0.051**	3.35
SB3	D	94.0	0.8508	3.5	0.00550	60	2.0	2.8	1098	1.4	2.4	3.6	6.2	1158	16.4	9.0	**0.090**	3.35
SB4	D	94.0	0.8508	0.5	0.00082	60	2.0	2.8	365	2.7	3.3	5.0	1.8	425	12.4	4.6	**0.050**	3.35
ST1	D	94.0	0.8508	1.1	0.00178	30	2.0	2.0	420	0.5	1.4	2.2	4.9	450	12.5	6.9	**0.069**	3.43
ST2	D	94.0	0.8508	9.6	0.01501	30	2.0	2.0	2980	4.0	4.0	6.1	8.8	3010	26.7	10.8	**0.108**	3.37
ST4	D	94.0	0.8508	6.0	0.00932	30	2.0	2.0	2525	4.8	4.4	6.7	6.9	2555	24.2	8.9	**0.089**	3.40
ST6	D	94.0	0.8508	1.8	0.00286	30	2.0	2.0	800	5.0	4.5	6.8	2.6	830	14.6	4.5	**0.050**	3.38
SV1	D	94.0	0.8508	3.6	0.00558	62	2.0	2.8	975	4.3	4.2	6.3	3.2	1037	15.8	6.0	**0.060**	3.35
SV2	D	94.0	0.8508	2.1	0.00321	62	2.0	2.8	705	5.8	4.9	7.4	2.2	767	14.3	5.0	**0.050**	3.34
SV3	D	94.0	0.8508	2.7	0.00428	62	2.0	2.8	800	5.8	4.9	7.4	2.4	862	14.8	5.2	**0.052**	3.32
COS-1	D	81.5	0.6858	3.2	0.00497	50	2.0	4.2	1925	6.2	5.0	7.6	4.8	1975	21.0	9.0	**0.090**	3.39
COS-2	D	81.5	0.6858	2.7	0.00422	50	2.0	4.2	1730	4.9	4.5	6.8	4.9	1780	19.9	9.1	**0.091**	3.36
COS-3	D	81.5	0.6858	5.6	0.00875	50	2.0	4.2	1516	5.3	4.7	7.0	4.2	1566	18.7	8.4	**0.084**	3.39
COS-4	D	81.5	0.6858	9.6	0.01498	50	2.0	4.2	1880	5.4	4.7	7.1	5.0	1930	20.7	9.2	**0.092**	3.36
COS-5	D	81.5	0.6858	3.2	0.00502	50	1.0	5.3	1878	6.7	5.2	7.9	4.5	1928	20.7	9.8	**0.098**	3.34
Referenced from the *Technical Drainage Study* for 2004 *Summerlin West MPU*																		
7-2A	D	88.2	0.7742	288.8	0.4513	200	2.0	6.6	9426	8.5	5.9	8.9	18.1	9626	63.5	24.7	**0.247**	3.50
7-2B	E	88.0	0.7716	60.4	0.0944	500	8.0	6.6	3630	8.0	4.2	8.3	8.3	4130	N/A	14.9	**0.149**	3.58
7-4A	E	88.0	0.7716	214.1	0.3345	500	8.0	6.6	10732	7.0	3.9	7.8	24.1	11232	N/A	30.7	**0.307**	3.46
7-5A	D	87.0	0.7584	190.0	0.297	200	2.0	6.9	4110	7.8	5.6	8.5	8.5	4310	33.9	15.4	**0.154**	3.43
7-7A	D	88.7	0.7808	51.8	0.081	200	2.0	6.4	3641	7.4	5.5	8.3	7.8	3841	31.3	14.3	**0.143**	3.44

Tc = Ti + Tt Tlag = 0.6 Tc

Ti = 1.8 (1.1 - K) $L^{1/2}$ / $S^{1/3}$

K = 0.0132 (CN) - 0.39

For the travel time (Tt) calculations,
V1 applies to the first 500 feet of travel distance;
V2 applies to the remaining travel distance.

Existing: V1 = 14.8*(S/100)$^{1/2}$ V2 = 29.4*(S/100)$^{1/2}$

Developed: V1 = 20.2*(S/100)$^{1/2}$ V2 = 30.6*(S/100)$^{1/2}$

REFERENCE:

STANDARD FORM 4

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1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*               JUN  1998               *
*            VERSION 4.1                *
*                                       *
*  RUN DATE   09JUN14  TIME  16:13:52   *
*                                       *
*****************************************
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*************************************
*                                   *
*    U.S. ARMY CORPS OF ENGINEERS   *
*    HYDROLOGIC ENGINEERING CENTER  *
*          609 SECOND STREET        *
*       DAVIS, CALIFORNIA 95616     *
*           (916) 756-1104          *
*                                   *
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X     X  XXXXXXX   XXXXX           X
X     X  X        X     X         XX
X     X  X        X                X
XXXXXXX  XXXX     X        XXXXX   X
X     X  X        X                X
X     X  X        X     X          X
X     X  XXXXXXX   XXXXX           XXX
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1 HEC-1 INPUT PAGE 1

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

              *DIAGRAM
    1         ID   ************************************************************
    2         ID   * ........................................................... *
    3         ID   * :                  SUMMERLIN VILLAGE 24                   : *
    4         ID   * :               CONCEPTUAL DRAINAGE STUDY                 : *
    5         ID   * :                 ULTIMATE CONDITIONS                     : *
    6         ID   * :                                                         : *
    7         ID   * :.........................................................: *
    8         ID   * :             RETURN PERIOD_ _ _ _100/10-YEAR             : *
    9         ID   * :             DISTRIBUTUION_ _ _ _6-HOUR SDN3             : *
   10         ID   * :             PROJECT NO_ _ _ _ _62024-320                : *
   11         ID   * :             FILENAME_ _ _ _ _ ULT-V24R.H1               : *
   12         ID   * :             DATE MODELED_ _ _ _ 6/03/14                 : *
   13         ID   * :             MODELED BY_ _ _ _ _ DBC/RRD                 : *
   14         ID   * :.........................................................: *
   15         ID
   16         ID                REFERENCED HEC-1 MODELS:
   17         ID    1) 2006 SUMMERLIN WEST PLANNING AREA FLOOD CONTROL MASTER PLAN UPDATE
   18         ID    2) CONCEPTUAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 24
   19         ID    3) TECHNICAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 24 UNIT 1 IMPROVEMENTS
   20         ID       INCLUDING PARCELS A AND B MASS GRADING
   21         ID    4) TECHNICAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 23A/24 SKY VISTA
   22         ID       DRIVE IMPROVEMENTS
   23         ID    5) TECHNICAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 24 UNIT 2 IMPROVEMENTS
   24         ID    6) TECHNICAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 24 - PARCEL A
   25         ID    7) TECHNICAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 24 - PARCEL B
   26         ID
   27         ID              DEPTH AREA REDUCTION FACTOR
   28         ID      DARFS RERERENCED FROM THE CONCEPTUAL DRAINAGE STUDY
   29         ID
   30         ID                 SQ MILES            DARF
   31         ID                    0-.1             1.0
   32         ID                   .1-.3            .988
   33         ID                   .3-.5            .980
   34         ID                   .5-.7            .976
   35         ID                   .7-.9            .972
   36         ID                   .9-2.0           .950
   37         ID                  10-YEAR           .575
   38         ID
   39         ID
   40         IT       5       0       0     300
   41         IO       5
   42         IN       5       0       0
   43         JR    PREC       1    .988    .980    .976    .972    .950    .575
              *
              *
              *
              * BEGIN ALTA DRIVE

   44         KK    ALTA
   45         KM   ALTA DRIVE WEST OF CROSSBRIDGE DR TO SKY VISTA DR
   46         BA  .01533
   47         PB    3.41
   48         PC    .000    .020    .057    .070    .087    .108    .124    .130    .130    .130
   49         PC    .130    .130    .130    .133    .140    .142    .148    .158    .172    .181
```

1 HEC-1 INPUT PAGE 2

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

   50         PC    .190    .197    .199    .200    .201    .204    .214    .229    .241    .249
   51         PC    .251    .256    .270    .278    .281    .283    .295    .322    .352    .409
```

```
 52          PC    .499    .590    .710    .744    .781    .812    .819    .835    .851    .856
 53          PC    .860    .868    .876    .888    .910    .926    .937    .950    .970    .976
 54          PC    .982    .985    .987    .989    .990    .993    .993    .994    .995    .998
 55          PC    .998    .999   1.00
 56          LS       0      94
 57          UD   0.098
             *

 58          KK     ST1
 59          KM   SUBBASIN ST1
 60          KM   PORTION OF CROSSBRIDGE DR SOUTH OF ALTA DR
 61          BA  .00178
 62          PB    3.43
 63          LS       0      94
 64          UD   0.069
             *

 65          KK    CPAD
 66          KM   COMBINE ALTA AND ST1
 67          HC       2
             * BEGIN RUNOFF TO CROSSBRIDGE DRIVE
             *

 68          KK    7-7A
 69          KM    OFFSITE SUBBASIN 7-7A
 70          BA    .081
 71          PB    3.44
 72          LS       0    88.7
 73          UD    .143
             *

 74          KK   7-7Ar
 75          KM   ROUTE 7-7Ar TO CP1
 76          RD    1845    0.07   0.016           TRAP       0      50
             *

 77          KK       L
 78          KM   SUBBASIN PARCEL L
 79          BA  .02427
 80          PB    3.41
 81          LS       0      92.2
 82          UD   0.101
             *

 83          KK       M
 84          KM   SUBBASIN PARCEL M
 85          BA  .03445
 86          PB    3.40
 87          LS       0      92.2
 88          UD   0.107
             *
```



```
LINE         ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

 89          KK     CP1
 90          KM   COMBINE 7-7A, M AND L IN CROSSBRIDGE DRIVE
 91          HC       3
             *

 92          KK    CP1r
 93          KM   ROUTE CP1 TO CP2
 94          RD     785   0.024   0.016           TRAP       0      50
             *

 95          KK       K
 96          KM   SUBBASIN PARCEL K
 97          BA  .04618
 98          PB    3.39
 99          LS       0      86.4
100          UD   0.127
             *

101          KK     ST4
102          KM   SUBBASIN ST4 CROSSBRIDGE DRIVE
103          BA  .00932
104          PB    3.40
105          LS       0      94
106          UD   0.089
             *

107          KK     CP2
108          KM   COMBINE K, ST4 AND CP1 IN CROSSBRIDGE DRIVE
109          HC       3
             *

110          KK    CP2r
111          KM   ROUTE CP2 TO CP3
112          RD     915    .045    .013           CIRC     6.0
             *

113          KK     ST6
114          KM   SUBBASIN ST6 SUNCREEK RD
115          BA  .00286
116          PB    3.38
117          LS       0      94
118          UD   0.050
             *
```

```
 119          KK     CP3
 120          KM   COMBINE ST6 AND CP2 IN SUNCREEK RD
 121          HC       2
              *
1                                    HEC-1 INPUT                                    PAGE  4

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 122          KK    CS-1
 123          KM   SUBBASIN PARCEL CS-1
 124          BA  .02631
 125          PB    3.38
 126          LS       0      92.2
 127          UD   0.108
              *

 128          KK     CP5
 129          KM   COMBINE CP3 AND CS-1 AT INTERSECTION OF SKY VISTA DR AND SUNCREEK RD
 130          HC       2
              *

 131          KK    CP5r
 132          KM   ROUTE CP5 TO CP6
 133          RD    1780    .040    .013            CIRC     6.5
              *

 134          KK     ST2
 135          KM   SUBBASIN ST2
 136          KM   SKY VISTA DR FROM ALTA DR TO CROSSBRIDGE DR
 137          BA  .01501
 138          PB    3.37
 139          LS       0      94
 140          UD   0.108
              *

 141          KK     CP6
 142          KM   COMBINE CP5 AND ST2 IN SKY VISTA DR AT INTERSECTION OF SKY VISTA DR
 143          KM   AND CROSSBRIDGE DR (EXISTING UNIT 1 IMPROVEMENTS)
 144          HC       2
              *
              * END RUNOFF TO SKY VISTA STORM DRAIN
              *
              * BEGIN RUNOFF TO MULTIPLE CULVERTS AT CROSSBRIDGE DR
              *

 145          KK    7-2B
 146          KM   SUBBASIN 7-2B WEST OF VILLAGE 24
 147          BA  0.0944
 148          PB    3.58
 149          LS       0      88
 150          UD   0.149
              *

 151          KK   7-2Br
 152          KM   ROUTE 7-2Br THROUGH 7-2A TO CRR1
 153          KM   SLOPE 7.1%
 154          KM    NSTEPS    K       X
 155          RM       2    .129    0.15
              *
1                                    HEC-1 INPUT                                    PAGE  5

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 156          KK    7-2A
 157          KM   SUBBASIN 7-2A WEST OF VILLAGE 24
 158          BA   .4513
 159          PB    3.50
 160          LS       0    88.2
 161          UD   0.247
              *

 162          KK    CRR1
 163          KM   COMBINE 7-2B AND 7-2A NEAR VILLAGE 24 BOUNDARY
 164          HC       2
              *

 165          KK     FS1
 166          KM   DIVERT 320 CFS TO COMBINATION POINT CRR2
              *  REFERENCED FROM THE UNIT 2 TDS TO MATCH FLOW WHERE CROSSBRIDGE DR
              *  AND SKY VISTA STORM DRAINS TIE TOGETHER
 167          DT    DIV1
 168          DI       0     841
 169          DQ       0     287
              *

 170          KK   CRR1r
 171          KM   ROUTE CRR1 THROUGH SUBBASINS COS-1 AND COS-2 TO CP7
 172          KM   REFERENCED FROM THE UNIT 2 TDS
 173          KM   SLOPE 5.8%
 174          KM   NSTEPS    K       X
 175          RM       1    .058    0.15
              *

 176          KK   COS-1
 177          KM   SUBBASIN COS-1 OPEN SPACE AREA UPSTREAM OF CROSSBRIDGE BETWEEN
 178          KM   PARCELS K AND J
```

```
179          BA  .00497
180          PB    3.39
181          LS       0      81.5
182          UD   0.090
             *

183          KK    CP12
184          KM   COMBINE FS1 AND COS-1
185          HC       2
             *

186          KK     CD1
187          KM   SUBBASIN CD1
188          KM   UNIT 2 PORTION OF CROSSBRIDGE DRIVE
189          BA  .00656
190          PB    3.38
191          LS       0      94
192          UD   0.097
             *
```

1 HEC-1 INPUT PAGE 6

```
LINE         ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

193          KK       C
194          KM   SUBBASIN PARCEL C
195          BA  .03938
196          PB    3.37
197          LS       0      85.7
198          UD   0.165
             *

199          KK   COS-2
200          KM   SUBBASIN COS-2 OPEN SPACE AREA DOWNSTREAM OF CROSSBRIDGE
201          BA  .00422
202          PB    3.36
203          LS       0      81.5
204          UD   0.091
             *

205          KK     CP7
206          KM   AT EXISTING UNIT 1 7' BY 7' RCB OPEN INLET
207          KM   COMBINE CP12, CD1, C, AND COS-2
208          HC       4
             *

209          KK     CP8
210          KM   CONCENTRATION POINT CP8 (AT EXISTING UNIT 1 STORM DRAIN IN CROSSBRIDGE)
211          KM   COMBINE CP7 (FLOW TO OPEN RCB INLET) AND CP6 (FLOW IN SKY VISTA STORM DRAIN)
212          HC       2
             *

213          KK       D
214          KM   SUBBASIN PARCEL D
215          BA  .05366
216          PB    3.36
217          LS       0      86.4
218          UD   0.163
             *

219          KK    CP15
220          KM   FORMERLY CP10 IN THE 2006 SUMMERLIN WEST MPU
221          KM   COMBINE CP8 AND D
222          HC       2
             *

223          KK     SB4
224          KM   SUBBASIN SB4
225          KM   UNIT 1 PORTION OF CROSSBRIDGE DR
226          BA  .00082
227          PB    3.35
228          LS       0      94
229          UD   0.050
             *
```

1 HEC-1 INPUT PAGE 7

```
LINE         ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

230          KK     SB3
231          KM   SUBBASIN SB3
232          KM   UNIT 1 PORTION OF CROSSBRIDGE DRIVE
233          BA  .00550
234          PB    3.35
235          LS       0      94
236          UD   0.090
             *

237          KK    NP-1
238          KM   SUBBASIN NP-1
239          BA  .01648
240          PB    3.35
241          LS       0      81.5
242          UD   0.162
             *

243          KK    CP16
244          KM   COMBINE CP15, SB4, SB3, AND NP-1
245          HC       4
```

```
                *

 246            KK     CD3
 247            KM   SUBBASIN CD3
 248            KM   UNIT 2 PORTION OF CROSSBRIDGE DR - DRAINS TO EXISTING UNIT 1 IMPROVEMENTS
 249            BA  .00209
 250            PB    3.36
 251            LS       0       94
 252            UD   0.050
                *

 253            KK     SB1
 254            KM   SUBBASIN SB1
 255            KM   UNIT 1 PORTION OF CROSSBRIDGE DR
 256            BA  .00566
 257            PB    3.36
 258            LS       0       94
 259            UD   0.063
                *

 260            KK     SB2
 261            KM   SUBBASIN SB2
 262            KM   UNIT 1 PORTION OF CROSSBRIDGE DR
 263            BA  .00200
 264            PB    3.35
 265            LS       0       94
 266            UD   0.051
                *
1                                          HEC-1 INPUT                                          PAGE  8

LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 267            KK       E
 268            KM   SUBBASIN PARCEL E
 269            BA  .03739
 270            PB    3.37
 271            LS       0       86.4
 272            UD   0.148
                *

 273            KK      RE
 274            KM   ROUTE E TRHOUGH WS-1 TO CP17
 275            RD     560   0.039   0.016            TRAP       0       50
                *

 276            KK    WS-1
 277            KM   SUBBASIN WS-1
 278            BA  .00988
 279            PB    3.36
 280            LS       0       92.2
 281            UD   0.117
                *

 282            KK   CP17A
 283            KM   COMBINE E and WS-1
 284            HC       2
                *

 285            KK    CP17
 286            KM   COMBINE SB1, SB2, CD3 and CP17A
 287            HC       4
                *

 288            KK    CP18
 289            KM   FORMERLY CP12 IN THE 2006 SUMMERLIN WEST MPU
 290            KM   COMBINE CP16 AND CP17
 291            HC       2
                *

 292            KK   RCP18
 293            KM   ROUTE CP18 TO CP19
 294            RD     915   0.084   0.016            TRAP       0       50
                *

 295            KK   COS-5
 296            KM   SUBBASIN COS5
 297            BA  .00502
 298            PB    3.34
 299            LS       0       81.5
 300            UD   0.098
                *
1                                          HEC-1 INPUT                                          PAGE  9

LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 301            KK       B
 302            KM   SUBBASIN PARCEL B
 303            BA  .04683
 304            PB    3.35
 305            LS       0       90.7
 306            UD   0.119
                *

 307            KK    CP19
 308            KM   COMBINE COS-5, B, AND CP18
 309            HC       3
                *
```

```
* END RUNOFF TO EXISTING UNIT 1 IMPROVEMENTS
*
* BEGIN RUNOFF TO EXISTING WASH SOUTHWEST OF CROSSBRIDGE DRIVE
*

KK    7-5A
KM    SUBBASIN 7-5A WEST OF VILLAGE 24
BA    0.297
PB     3.43
LS        0     87.0
UD    0.154
*

KK    RETD1
KM    RETRIEVE DIVERTED FLOW FROM CRR1
DR     DIV1
*

KK    DIV1r
*  REFERENCED FROM THE 2006 SUMMERLIN WEST MPU
KM    ROUTE DIVERTED FLOW FROM CRR1 TO CRR2 ALONG WEST BOUNDARY OF VILLAGE 24
KM     LENGTH  SLOPE  ROUGHNESS        SHAPE       BW       SS
RD     1890    .010    .016             TRAP        0       25
*

KK    CRR2
KM    COMBINE 7-5A AND DIV1r NEAR VILLAGE 24 BOUNDARY
KM    REFERENCED FROM THE 2006 SUMMERLIN WEST MPU
HC        2
*

KK    CRR2r
KM    ROUTE CRR2 THROUGH SUBBASINS COS-3 TO CP10
*  REFERENCED FROM THE 2006 SUMMERLIN WEST MPU
KM    NSTEPS    K        X
RM        1    .054    0.15
*
```



```
LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

KK        I
KM    SUBBASIN PARCEL I WITH OUTFALL IN EXISTING WASH (COS-3)
BA   .06047
PB     3.39
LS        0      86.4
UD    0.147
*

KK    COS-3
KM    SUBBASIN  COS-3 OPEN SPACE (EXISTING WASH)
BA   .00875
PB     3.39
LS        0      81.5
UD    0.084
*

KK    CP10A
KM    COMBINE CRR2, I, AND COS-3 IN EXISTING WASH NEAR CROSSBRIDGE DR
HC        3
*

KK        G
KM    SUBBASIN PARCEL G
BA   .06655
PB     3.39
LS        0      84.2
UD    0.168
*

KK        H
KM    SUBBASIN PARCEL H
BA   .03449
PB     3.39
LS        0      85.3
UD    0.124
*

KK    CP10B
KM    COMBINE G AND H IN EXISTING WASH NEAR CROSSBRIDGE DR
HC        2
*

KK        J
KM    SUBBASIN PARCEL J
BA   .06819
PB     3.39
LS        0      86.4
UD    0.169
*
```



```
LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

KK      CD2
KM    SUBBASIN CD2
KM    UNIT 2 PORTION OF CROSSBRIDGE DRIVE
```

```
370          BA  .00478
371          PB    3.37
372          LS       0      94
373          UD   0.113
             *

374          KK     CP9
375          KM   COMBINE J AND CD2
376          HC       2
             *

377          KK    CP10
378          KM   COMBINE CP10A, CP10B, AND CP9
379          HC       3
             *

380          KK        F
381          KM   SUBBASIN PARCEL F WITH OUTFALL TO EXISTING WASH (COS-4)
382          BA  .05913
383          PB    3.37
384          LS       0      84.2
385          UD   0.150
             *

386          KK   COS-4
387          KM   SUBBASIN PARCEL COS-4 OPEN SPACE (EXISTING WASH)
388          BA  .01498
389          PB    3.36
390          LS       0      81.5
391          UD   0.092
             *

392          KK    CP11
393          KM   AT SOUTHERN BOUNDARY OF VILLAGE 24 (COS-4)
394          KM   COMBINE CP10, F, AND COS-4 IN EXISTING WASH
395          HC       3
             *

396          KK     SV1
397          KM   SUBBASIN SV1 (SKY VISTA DR TDS)
398          BA  .00558
399          PB    3.35
400          LS       0      94
401          UD   0.060
             *
```



```
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9.....10

402          KK     SV2
403          KM   SUBBASIN SV2 (SKY VISTA DR TDS)
404          BA  .00321
405          PB    3.34
406          LS       0      94
407          UD   0.050
             *

408          KK   CPSV2
409          KM   COMBINE SV1 AND SV2 IN EXISTING STORM DRAIN TO PARCEL A
410          HC       2
             *

411          KK     A2
412          KM   SUBBASIN A2
413          BA  .05306
414          PB    3.34
415          LS       0      90.2
416          UD   0.145
             *

417          KK   CPA2
418          KM   COMBINE CPSV2 AND A2 IN EXISTING PARCEL A STORM DRAIN
419          HC       2
             *

420          KK     SV3
421          KM   SUBBASIN SV3 (SKY VISTA DR TDS)
422          BA  .00428
423          PB    3.32
424          LS       0      94
425          UD   0.052
             *

426          KK      A1
427          KM   SUBBASIN A1
428          BA  .00714
429          PB    3.33
430          LS       0      87.6
431          UD   0.088
             *

432          KK   CPSV3
433          KM   CONCENTRATION POINT SV3
434          KM   COMBINE SV3 AND A1 TO EX STORM DRAIN IN CHARLESTON BLVD
435          HC       2
             *
             *
436          ZZ
```

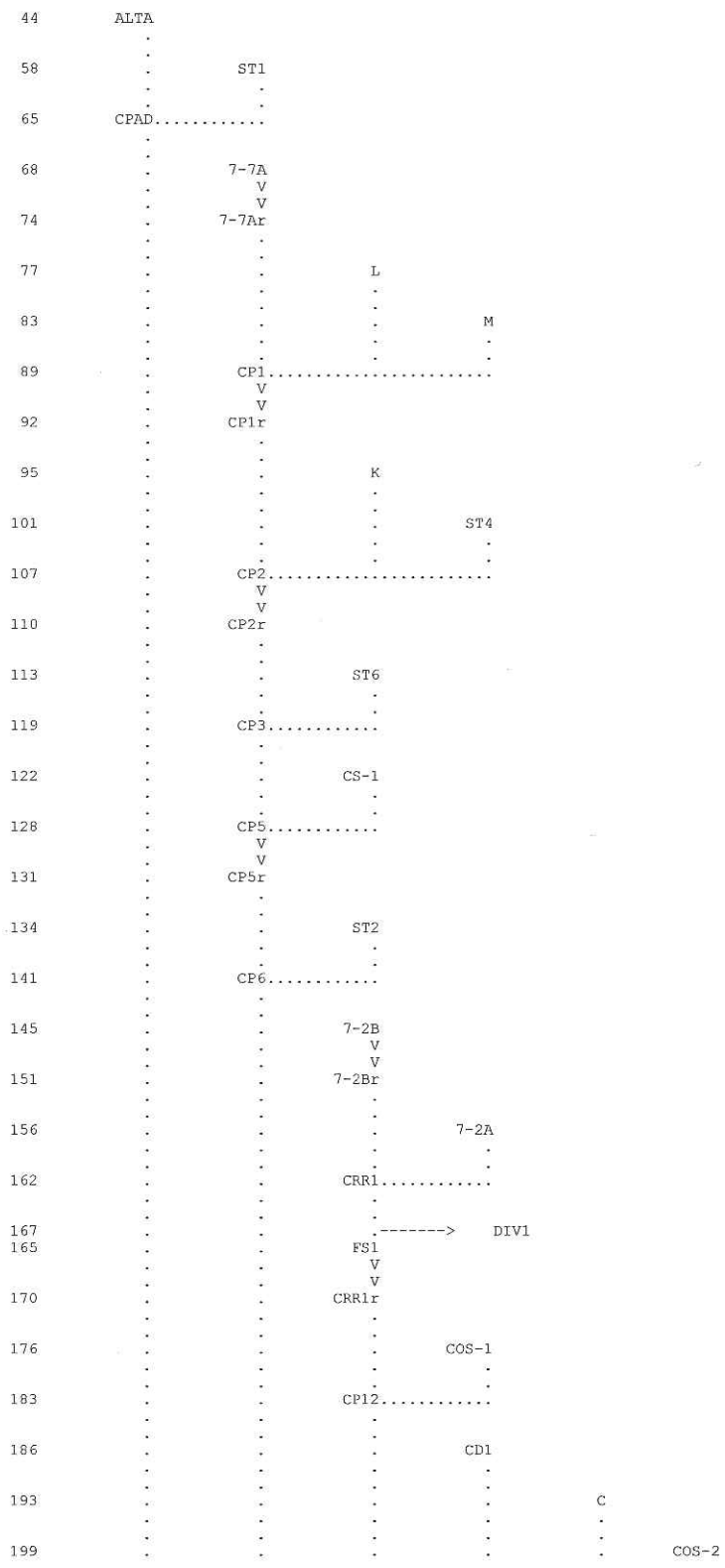
1

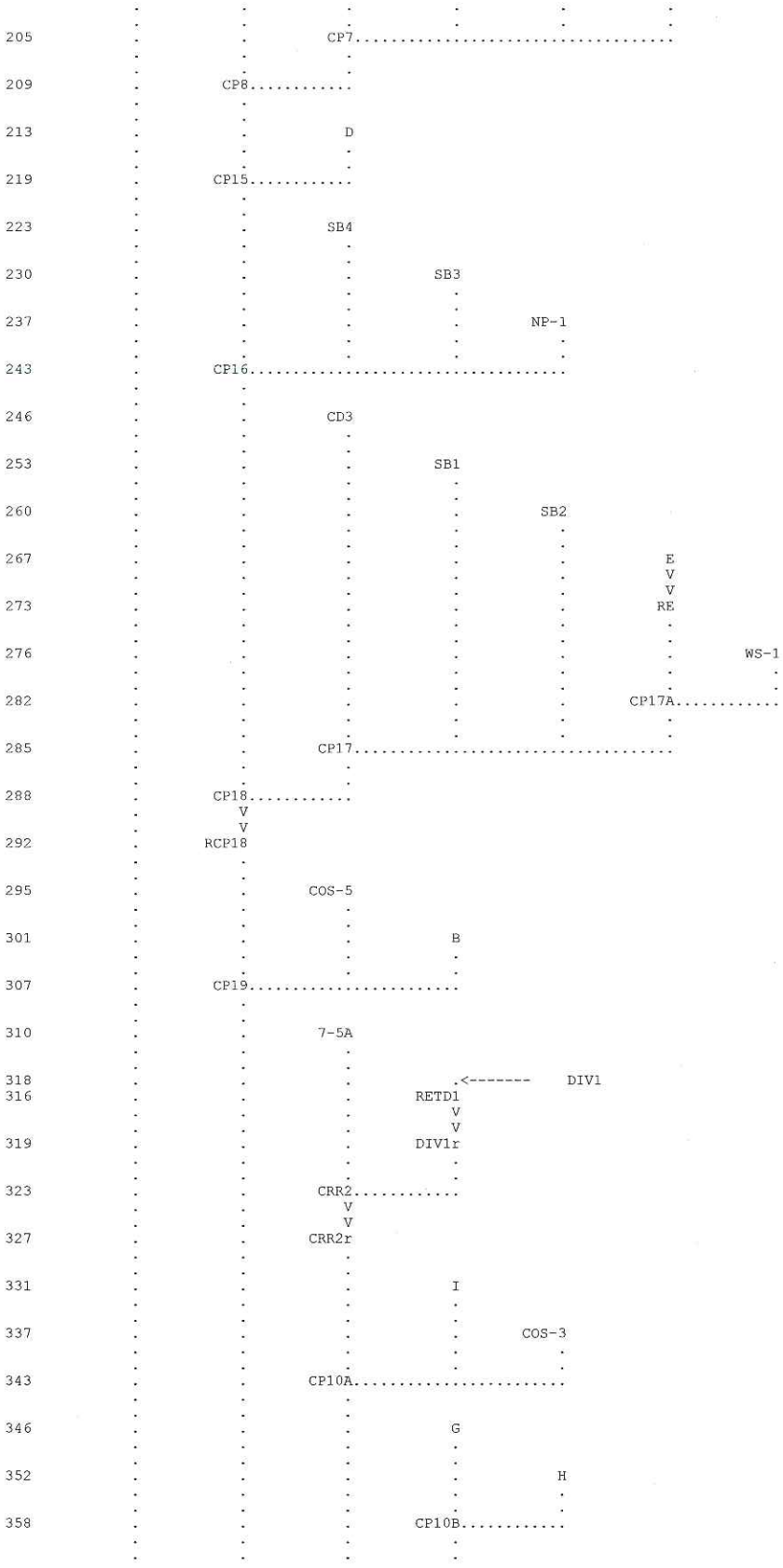
SCHEMATIC DIAGRAM OF STREAM NETWORK

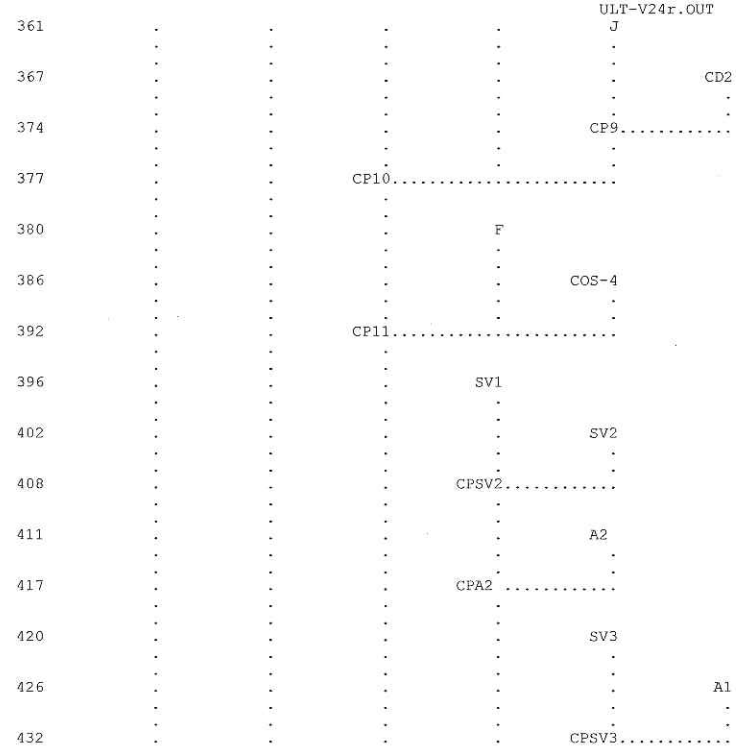
INPUT LINE NO.

(V) ROUTING (---->) DIVERSION OR PUMP FLOW

(.) CONNECTOR (<----) RETURN OF DIVERTED OR PUMPED FLOW




205 CP7
209 CP8
213 D
219 CP15
223 SB4
230 SB3
237 NP-1
243 CP16
246 CD3
253 SB1
260 SB2
267 E
V
V
273 RE
276 WS-1
282 CP17A
285 CP17
288 CP18
V
V
292 RCP18
295 COS-5
301 B
307 CP19
310 7-5A
318 .<------- DIV1
316 RETD1
V
V
319 DIV1r
323 CRR2
V
V
327 CRR2r
331 I
337 COS-3
343 CP10A
346 G
352 H
358 CP10B



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1*****************************************
 *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
 *              JUN   1998               *
 *            VERSION 4.1                *
 *                                       *
 *  RUN DATE   09JUN14  TIME  16:13:52   *
 *                                       *
 *****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*           (916) 756-1104              *
*                                       *
*****************************************
```

```
************************************************************
* ........................................................ *
* :                  SUMMERLIN VILLAGE 24                : *
* :               CONCEPTUAL DRAINAGE STUDY              : *
* :                 ULTIMATE CONDITIONS                  : *
* :                                                      : *
* :......................................................: *
* :            RETURN PERIOD_ _ _ _100/10-YEAR           : *
* :            DISTRIBUTUION_ _ _ _6-HOUR SDN3           : *
* :            PROJECT NO_ _ _ _ _62024-320              : *
* :            FILENAME_ _ _ _ _ ULT-V24R.H1             : *
* :            DATE MODELED_ _ _ 6/03/14                 : *
* :            MODELED BY_ _ _ _ DBC/RRD                 : *
* :......................................................: *
```

REFERENCED HEC-1 MODELS:

1) 2006 SUMMERLIN WEST PLANNING AREA FLOOD CONTROL MASTER PLAN UPDATE
2) CONCEPTUAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 24
3) TECHNICAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 24 UNIT 1 IMPROVEMENTS INCLUDING PARCELS A AND B MASS GRADING
4) TECHNICAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS
5) TECHNICAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 24 UNIT 2 IMPROVEMENTS
6) TECHNICAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 24 - PARCEL A
7) TECHNICAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 24 - PARCEL B

DEPTH AREA REDUCTION FACTOR
DARFS RERERENCED FROM THE CONCEPTUAL DRAINAGE STUDY

SQ MILES	DARF
0-.1	1.0
.1-.3	.988
.3-.5	.980
.5-.7	.976
.7-.9	.972
.9-2.0	.950
10-YEAR	.575

```
  41 IO          OUTPUT CONTROL VARIABLES
                       IPRNT          5  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL         0.  HYDROGRAPH PLOT SCALE

      IT          HYDROGRAPH TIME DATA
                       NMIN           5  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1   0  STARTING DATE
                       ITIME         0000  STARTING TIME
                         NQ          300  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      2   0  ENDING DATE
                      NDTIME        0055  ENDING TIME
                      ICENT           19  CENTURY MARK

                    COMPUTATION INTERVAL      .08 HOURS
                       TOTAL TIME BASE   24.92 HOURS

           ENGLISH UNITS
                DRAINAGE AREA         SQUARE MILES
                PRECIPITATION DEPTH   INCHES
                LENGTH, ELEVATION     FEET
                FLOW                  CUBIC FEET PER SECOND
                STORAGE VOLUME        ACRE-FEET
                SURFACE AREA          ACRES
                TEMPERATURE           DEGREES FAHRENHEIT

      JP          MULTI-PLAN OPTION
                       NPLAN          1  NUMBER OF PLANS

      JR          MULTI-RATIO OPTION
                     RATIOS OF PRECIPITATION
                    1.00       .99       .98       .98       .97       .95       .57
1
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PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN		RATIOS APPLIED TO PRECIPITATION RATIO 1 1.00	RATIO 2 .99	RATIO 3 .98	RATIO 4 .98	RATIO 5 .97	RATIO 6 .95	RATIO 7 .57
HYDROGRAPH AT											
+	ALTA	.02	1	FLOW	35.	35.	35.	34.	34.	33.	18.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT											
+	ST1	.00	1	FLOW	5.	4.	4.	4.	4.	4.	2.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT											
+	CPAD	.02	1	FLOW	40.	39.	39.	39.	39.	38.	21.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT											
+	7-7A	.08	1	FLOW	153.	150.	149.	148.	147.	143.	70.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
ROUTED TO											
+	7-7Ar	.08	1	FLOW	147.	145.	142.	141.	141.	137.	65.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.67
HYDROGRAPH AT											
+	L	.02	1	FLOW	53.	52.	52.	51.	51.	50.	26.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT											
+	M	.03	1	FLOW	73.	72.	71.	71.	71.	69.	36.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT											
+	CP1	.14	1	FLOW	266.	262.	259.	257.	256.	250.	125.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
ROUTED TO											
+	CP1r	.14	1	FLOW	261.	257.	254.	252.	250.	244.	121.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	K	.05	1	FLOW	80.	79.	78.	77.	77.	74.	34.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	ST4	.01	1	FLOW	22.	22.	22.	22.	21.	21.	12.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT											
+	CP2	.20	1	FLOW	360.	354.	350.	347.	346.	336.	164.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
ROUTED TO											
+	CP2r	.20	1	FLOW	357.	352.	347.	345.	343.	333.	163.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	ST6	.00	1	FLOW	8.	8.	8.	7.	7.	7.	4.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50

2 COMBINED AT											
+	CP3	.20	1	FLOW	361.	356.	351.	349.	347.	338.	165.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	CS-1	.03	1	FLOW	55.	55.	54.	54.	53.	52.	27.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT											
+	CP5	.22	1	FLOW	415.	408.	404.	401.	399.	388.	192.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
ROUTED TO											
+	CP5r	.22	1	FLOW	410.	404.	398.	396.	394.	383.	188.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	ST2	.02	1	FLOW	33.	33.	32.	32.	32.	31.	17.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT											
+	CP6	.24	1	FLOW	441.	435.	429.	427.	425.	413.	204.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	7-2B	.09	1	FLOW	182.	179.	177.	176.	175.	170.	82.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
ROUTED TO											
+	7-2Br	.09	1	FLOW	162.	160.	158.	157.	156.	152.	73.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.75
HYDROGRAPH AT											
+	7-2A	.45	1	FLOW	706.	695.	687.	684.	680.	659.	315.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67
2 COMBINED AT											
+	CRR1	.55	1	FLOW	869.	855.	845.	841.	836.	811.	386.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67
DIVERSION TO											
+	DIV1	.55	1	FLOW	296.	292.	289.	287.	285.	277.	132.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT											
+	FS1	.55	1	FLOW	572.	563.	557.	554.	551.	534.	255.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67
ROUTED TO											
+	CRR1r	.55	1	FLOW	557.	548.	542.	539.	536.	520.	249.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75
HYDROGRAPH AT											
+	COS-1	.00	1	FLOW	8.	8.	8.	7.	7.	7.	3.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT											
+	CP12	.55	1	FLOW	561.	552.	546.	543.	540.	524.	251.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75
HYDROGRAPH AT											
+	CD1	.01	1	FLOW	15.	15.	15.	15.	15.	14.	8.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT											
+	C	.04	1	FLOW	62.	61.	60.	59.	59.	57.	25.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	COS-2	.00	1	FLOW	6.	6.	6.	6.	6.	6.	2.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
4 COMBINED AT											
+	CP7	.60	1	FLOW	614.	605.	598.	595.	592.	574.	274.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75
2 COMBINED AT											
+	CP8	.84	1	FLOW	986.	971.	959.	954.	949.	922.	446.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT											
+	D	.05	1	FLOW	87.	85.	84.	84.	83.	81.	36.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT											
+	CP15	.89	1	FLOW	1063.	1046.	1034.	1029.	1023.	993.	479.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT											
+	SB4	.00	1	FLOW	2.	2.	2.	2.	2.	2.	1.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT											
+	SB3	.01	1	FLOW	13.	13.	13.	12.	12.	12.	7.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT											
+	NP-1	.02	1	FLOW	22.	22.	21.	21.	21.	20.	8.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58

4 COMBINED AT											
+	CP16	.92	1	FLOW	1091.	1074.	1061.	1056.	1050.	1019.	490.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT											
+	CD3	.00	1	FLOW	6.	6.	5.	5.	5.	5.	3.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT											
+	SB1	.01	1	FLOW	14.	14.	14.	14.	14.	14.	8.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT											
+	SB2	.00	1	FLOW	5.	5.	5.	5.	5.	5.	3.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT											
+	E	.04	1	FLOW	63.	61.	61.	60.	60.	58.	26.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
ROUTED TO											
+	RE	.04	1	FLOW	61.	60.	59.	59.	59.	56.	25.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	WS-1	.01	1	FLOW	20.	20.	20.	19.	19.	19.	10.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT											
+	CP17A	.05	1	FLOW	81.	80.	79.	78.	78.	75.	35.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
4 COMBINED AT											
+	CP17	.06	1	FLOW	97.	96.	94.	94.	94.	91.	43.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.58
2 COMBINED AT											
+	CP18	.97	1	FLOW	1180.	1161.	1147.	1141.	1135.	1100.	527.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.67
ROUTED TO											
+	RCP18	.97	1	FLOW	1172.	1153.	1139.	1134.	1128.	1094.	525.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT											
+	COS-5	.01	1	FLOW	7.	7.	7.	7.	7.	7.	3.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.58
HYDROGRAPH AT											
+	B	.05	1	FLOW	90.	89.	88.	87.	87.	85.	43.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
3 COMBINED AT											
+	CP19	1.03	1	FLOW	1254.	1233.	1219.	1212.	1205.	1168.	559.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.67
HYDROGRAPH AT											
+	7-5A	.30	1	FLOW	520.	511.	506.	503.	500.	484.	225.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	RETD1	.00	1	FLOW	296.	292.	289.	287.	285.	277.	132.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67
ROUTED TO											
+	DIV1r	.00	1	FLOW	292.	284.	280.	278.	277.	273.	129.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75
2 COMBINED AT											
+	CRR2	.30	1	FLOW	741.	728.	720.	716.	713.	689.	313.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.67
ROUTED TO											
+	CRR2r	.30	1	FLOW	729.	716.	709.	705.	702.	679.	310.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT											
+	I	.06	1	FLOW	102.	100.	99.	99.	98.	95.	43.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	COS-3	.01	1	FLOW	14.	14.	14.	13.	13.	13.	5.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT											
+	CP10A	.37	1	FLOW	823.	808.	800.	796.	792.	766.	350.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT											
+	G	.07	1	FLOW	100.	99.	97.	97.	96.	93.	39.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	H	.03	1	FLOW	58.	57.	56.	56.	56.	54.	24.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT											
+	CP10B	.10	1	FLOW	158.	155.	153.	153.	152.	146.	63.

				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	J	.07	1	FLOW	110.	108.	107.	107.	106.	102.	46.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	CD2	.00	1	FLOW	10.	10.	10.	10.	10.	10.	5.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT											
+	CP9	.07	1	FLOW	120.	118.	117.	116.	116.	112.	51.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
3 COMBINED AT											
+	CP10	.54	1	FLOW	1065.	1047.	1035.	1030.	1024.	991.	452.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT											
+	F	.06	1	FLOW	92.	90.	89.	88.	88.	85.	36.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	COS-4	.01	1	FLOW	23.	22.	22.	22.	22.	21.	8.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT											
+	CP11	.61	1	FLOW	1158.	1137.	1125.	1119.	1113.	1077.	490.
				TIME	3.58	3.58	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT											
+	SV1	.01	1	FLOW	14.	14.	14.	14.	14.	14.	8.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT											
+	SV2	.00	1	FLOW	9.	8.	8.	8.	8.	8.	4.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT											
+	CPSV2	.01	1	FLOW	23.	23.	22.	22.	22.	22.	12.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT											
+	A2	.05	1	FLOW	100.	98.	97.	97.	96.	94.	47.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT											
+	CPA2	.06	1	FLOW	114.	112.	111.	110.	110.	107.	54.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	SV3	.00	1	FLOW	11.	11.	11.	11.	11.	11.	6.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT											
+	A1	.01	1	FLOW	14.	13.	13.	13.	13.	13.	6.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT											
+	CPSV3	.01	1	FLOW	25.	25.	24.	24.	24.	23.	12.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50

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SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	INTERPOLATED TO COMPUTATION INTERVAL DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
FOR PLAN = 1 RATIO= .00									
7-7Ar	MANE	2.65	149.14	217.31	2.28	5.00	147.01	215.00	2.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9831E+01 EXCESS= .0000E+00 OUTFLOW= .9833E+01 BASIN STORAGE= .6206E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
7-7Ar	MANE	2.66	146.23	215.51	2.24	5.00	144.62	215.00	2.24

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9670E+01 EXCESS= .0000E+00 OUTFLOW= .9672E+01 BASIN STORAGE= .4999E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
7-7Ar	MANE	2.67	144.81	216.08	2.21	5.00	142.21	215.00	2.21

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9551E+01 EXCESS= .0000E+00 OUTFLOW= .9553E+01 BASIN STORAGE= .6144E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
7-7Ar	MANE	2.67	144.14	216.37	2.20	5.00	141.32	215.00	2.19

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9493E+01 EXCESS= .0000E+00 OUTFLOW= .9495E+01 BASIN STORAGE= .5767E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

7-7Ar	MANE	2.67	143.47	216.66	2.19	5.00	140.62	215.00	2.18

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9440E+01 EXCESS= .0000E+00 OUTFLOW= .9442E+01 BASIN STORAGE= .5274E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

7-7Ar	MANE	2.69	138.88	215.59	2.12	5.00	137.08	215.00	2.12

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9155E+01 EXCESS= .0000E+00 OUTFLOW= .9157E+01 BASIN STORAGE= .4986E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

7-7Ar	MANE	3.23	66.99	216.09	.99	5.00	64.71	220.00	.99

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4279E+01 EXCESS= .0000E+00 OUTFLOW= .4280E+01 BASIN STORAGE= .6139E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

CP1r	MANE	1.47	262.80	215.48	2.39	5.00	261.05	215.00	2.39

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1782E+02 EXCESS= .0000E+00 OUTFLOW= .1782E+02 BASIN STORAGE= .3081E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

CP1r	MANE	1.47	260.32	216.31	2.35	5.00	256.75	215.00	2.35

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1752E+02 EXCESS= .0000E+00 OUTFLOW= .1752E+02 BASIN STORAGE= .3039E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

CP1r	MANE	1.48	255.54	215.56	2.32	5.00	253.57	215.00	2.32

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1730E+02 EXCESS= .0000E+00 OUTFLOW= .1730E+02 BASIN STORAGE= .3054E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

CP1r	MANE	1.48	255.03	215.86	2.31	5.00	251.74	215.00	2.31

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1721E+02 EXCESS= .0000E+00 OUTFLOW= .1721E+02 BASIN STORAGE= .3585E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

CP1r	MANE	1.48	254.07	216.13	2.30	5.00	250.43	215.00	2.30

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1712E+02 EXCESS= .0000E+00 OUTFLOW= .1712E+02 BASIN STORAGE= .3320E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

CP1r	MANE	1.49	247.41	216.06	2.23	5.00	243.66	215.00	2.23

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1662E+02 EXCESS= .0000E+00 OUTFLOW= .1662E+02 BASIN STORAGE= .3429E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

CP1r	MANE	1.77	122.59	216.27	1.08	5.00	120.59	215.00	1.08

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8039E+01 EXCESS= .0000E+00 OUTFLOW= .8039E+01 BASIN STORAGE= .3544E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

CP2r	MANE	.43	358.00	215.57	2.32	5.00	357.20	215.00	2.32

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2414E+02 EXCESS= .0000E+00 OUTFLOW= .2414E+02 BASIN STORAGE= .5586E-04 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

CP2r	MANE	.44	353.11	215.42	2.28	5.00	351.55	215.00	2.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2373E+02 EXCESS= .0000E+00 OUTFLOW= .2373E+02 BASIN STORAGE= .5532E-04 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

CP2r	MANE	.44	348.49	215.50	2.25	5.00	347.25	215.00	2.25

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2344E+02 EXCESS= .0000E+00 OUTFLOW= .2344E+02 BASIN STORAGE= .5327E-04 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

CP2r	MANE	.44	346.32	215.35	2.24	5.00	344.93	215.00	2.24

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2331E+02 EXCESS= .0000E+00 OUTFLOW= .2331E+02 BASIN STORAGE= .5754E-04 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

CP2r	MANE	.44	343.77	215.14	2.23	5.00	343.02	215.00	2.23

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2319E+02 EXCESS= .0000E+00 OUTFLOW= .2319E+02 BASIN STORAGE= .5715E-04 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

CP2r	MANE	.44	334.78	215.49	2.16	5.00	333.49	215.00	2.16

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2249E+02 EXCESS= .0000E+00 OUTFLOW= .2249E+02 BASIN STORAGE= .5513E-04 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

CP2r	MANE	.51	163.90	215.59	1.03	5.00	162.55	215.00	1.03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1072E+02 EXCESS= .0000E+00 OUTFLOW= .1072E+02 BASIN STORAGE= .5638E-04 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

CP5r	MANE	.85	411.06	216.05	2.35	5.00	409.80	215.00	2.35

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2811E+02 EXCESS= .0000E+00 OUTFLOW= .2811E+02 BASIN STORAGE= .1118E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

CP5r	MANE	.85	406.30	215.87	2.31	5.00	403.80	215.00	2.31

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2764E+02 EXCESS= .0000E+00 OUTFLOW= .2764E+02 BASIN STORAGE= .1236E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

CP5r	MANE	.86	400.74	215.53	2.28	5.00	398.36	215.00	2.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2730E+02 EXCESS= .0000E+00 OUTFLOW= .2730E+02 BASIN STORAGE= .1196E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

CP5r	MANE	.86	398.99	215.81	2.27	5.00	396.48	215.00	2.27

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2716E+02 EXCESS= .0000E+00 OUTFLOW= .2716E+02 BASIN STORAGE= .1078E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

CP5r	MANE	.86	395.25	216.05	2.26	5.00	394.00	215.00	2.26

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2702E+02 EXCESS= .0000E+00 OUTFLOW= .2702E+02 BASIN STORAGE= .1176E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

CP5r	MANE	.86	385.07	215.54	2.19	5.00	382.71	215.00	2.19

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2620E+02 EXCESS= .0000E+00 OUTFLOW= .2620E+02 BASIN STORAGE= .1225E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

CP5r	MANE	.99	189.29	216.42	1.05	5.00	187.59	215.00	1.05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1260E+02 EXCESS= .0000E+00 OUTFLOW= .1260E+02 BASIN STORAGE= .1167E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RE	MANE	1.25	61.46	216.66	1.99	5.00	60.82	215.00	1.99

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3967E+01 EXCESS= .0000E+00 OUTFLOW= .3967E+01 BASIN STORAGE= .1724E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RE	MANE	1.26	60.87	216.33	1.95	5.00	59.99	215.00	1.96

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3896E+01 EXCESS= .0000E+00 OUTFLOW= .3896E+01 BASIN STORAGE= .1898E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RE	MANE	1.26	59.86	215.69	1.93	5.00	59.04	215.00	1.93

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3849E+01 EXCESS= .0000E+00 OUTFLOW= .3849E+01 BASIN STORAGE= .1915E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RE	MANE	1.26	59.74	216.01	1.92	5.00	58.79	215.00	1.92

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3825E+01 EXCESS= .0000E+00 OUTFLOW= .3825E+01 BASIN STORAGE= .1761E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RE	MANE	1.27	59.49	216.32	1.91	5.00	58.61	215.00	1.91

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3803E+01 EXCESS= .0000E+00 OUTFLOW= .3803E+01 BASIN STORAGE= .1929E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RE	MANE	1.28	57.15	215.55	1.84	5.00	56.44	215.00	1.84

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3672E+01 EXCESS= .0000E+00 OUTFLOW= .3672E+01 BASIN STORAGE= .2029E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RE	MANE	1.56	25.95	216.35	.81	5.00	24.99	215.00	.81

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1609E+01 EXCESS= .0000E+00 OUTFLOW= .1609E+01 BASIN STORAGE= .1848E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP18	MANE	.74	1182.67	216.46	1.82	5.00	1171.82	220.00	1.83

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9475E+02 EXCESS= .0000E+00 OUTFLOW= .9475E+02 BASIN STORAGE= .2115E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP18	MANE	.74	1162.85	216.58	1.79	5.00	1153.22	220.00	1.80

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9316E+02 EXCESS= .0000E+00 OUTFLOW= .9316E+02 BASIN STORAGE= .2264E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP18	MANE	.74	1149.58	216.51	1.77	5.00	1139.41	220.00	1.77

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9207E+02 EXCESS= .0000E+00 OUTFLOW= .9207E+02 BASIN STORAGE= .2285E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP18	MANE	.74	1142.17	216.06	1.76	5.00	1133.92	220.00	1.76

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9155E+02 EXCESS= .0000E+00 OUTFLOW= .9155E+02 BASIN STORAGE= .2322E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP18	MANE	.74	1136.92	216.37	1.75	5.00	1127.97	220.00	1.75

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9103E+02 EXCESS= .0000E+00 OUTFLOW= .9103E+02 BASIN STORAGE= .2345E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP18	MANE	.75	1101.84	216.57	1.70	5.00	1094.01	220.00	1.70

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8816E+02 EXCESS= .0000E+00 OUTFLOW= .8816E+02 BASIN STORAGE= .2146E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP18	MANE	.90	525.69	220.69	.79	5.00	524.84	220.00	.79

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4120E+02 EXCESS= .0000E+00 OUTFLOW= .4120E+02 BASIN STORAGE= .2285E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

DIV1r	MANE	4.01	293.32	224.77	-1.00	5.00	292.42	225.00	-1.00

FOR PLAN = 1 RATIO= .00

DIV1r	MANE	4.03	285.01	225.68	-1.00	5.00	284.38	225.00	-1.00

FOR PLAN = 1 RATIO= .00

DIV1r	MANE	4.04	281.25	222.25	-1.00	5.00	279.92	225.00	-1.00

FOR PLAN = 1 RATIO= .00

DIV1r	MANE	4.05	281.31	222.56	-1.00	5.00	278.34	225.00	-1.00

FOR PLAN = 1 RATIO= .00

DIV1r	MANE	4.05	281.36	222.86	-1.00	5.00	277.23	225.00	-1.00

FOR PLAN = 1 RATIO= .00

DIV1r	MANE	4.08	274.77	224.59	-1.00	5.00	273.30	225.00	-1.00

FOR PLAN = 1 RATIO= .00

DIV1r	MANE	4.91	131.02	226.07	-1.00	5.00	129.10	225.00	-1.00

*** NORMAL END OF HEC-1 ***

APPENDIX B

Hydraulic Calculations

Worksheet for Parcel COS-3 (CP10)

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.015	
Channel Slope	5.30	%
Height	6.00	ft
Bottom Width	7.00	ft
Discharge	343.00	ft^3/s

Results

Normal Depth	1.88	ft
Flow Area	13.15	ft^2
Wetted Perimeter	10.76	ft
Hydraulic Radius	1.22	ft
Top Width	7.00	ft
Critical Depth	4.21	ft
Percent Full	31.3	%
Critical Slope	0.00582	ft/ft
Velocity	26.08	ft/s
Velocity Head	10.57	ft
Specific Energy	12.45	ft
Froude Number	3.35	
Discharge Full	1318.69	ft^3/s
Slope Full	0.78339	ft/ft
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	31.32	%
Downstream Velocity	Infinity	ft/s

Worksheet for Parcel COS-3 (CP10)

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	1.88	ft
Critical Depth	4.21	ft
Channel Slope	5.30	%
Critical Slope	0.00582	ft/ft

Cross Section for Parcel COS-3 (CP10)

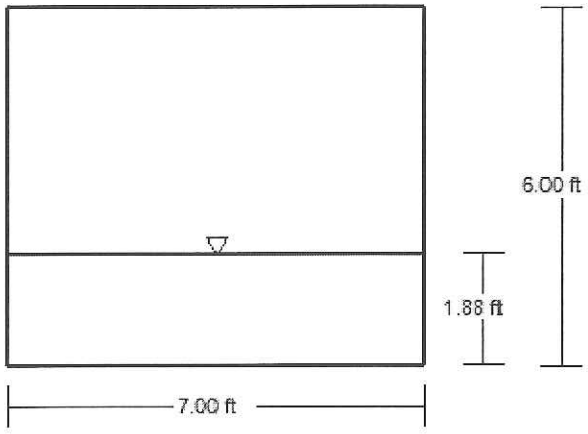
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.015	
Channel Slope	5.30	%
Normal Depth	1.88	ft
Height	6.00	ft
Bottom Width	7.00	ft
Discharge	343.00	ft³/s

Cross Section Image



V: 1
H: 1

Worksheet for Parcel C

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	1.00	%
Diameter	36.00	in
Discharge	62.00	ft^3/s

Results

Normal Depth	2.29	ft
Flow Area	5.79	ft^2
Wetted Perimeter	6.37	ft
Hydraulic Radius	0.91	ft
Top Width	2.55	ft
Critical Depth	2.54	ft
Percent Full	76.3	%
Critical Slope	0.00820	ft/ft
Velocity	10.72	ft/s
Velocity Head	1.78	ft
Specific Energy	4.07	ft
Froude Number	1.25	
Maximum Discharge	71.74	ft^3/s
Discharge Full	66.69	ft^3/s
Slope Full	0.00864	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	76.28	%
Downstream Velocity	Infinity	ft/s

Worksheet for Parcel C

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	2.29	ft
Critical Depth	2.54	ft
Channel Slope	1.00	%
Critical Slope	0.00820	ft/ft

Cross Section for Parcel C

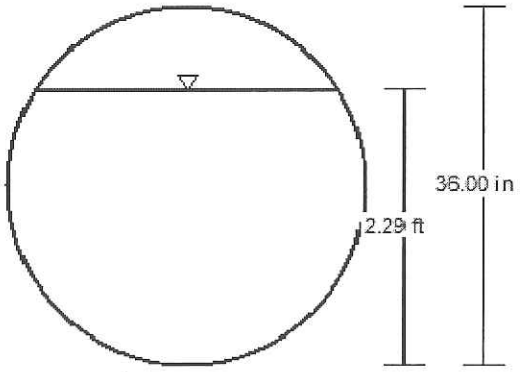
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	1.00	%
Normal Depth	2.29	ft
Diameter	36.00	in
Discharge	62.00	ft³/s

Cross Section Image



V: 1
H: 1

BOX CULVERT

Parcel COS-3 (CP10)

INPUT

Width of Box	7.00	ft
Height of Box	6.00	ft
Number of Barrels	5	
Length	100.00	ft
Slope	5.30	%
Manning's 'n'	0.015	
Flow "Q"	1030	cfs
Entrance Coef.	0.35	
Tail Water	0	ft

INLET

45d WWall	4.65	ft
Sq. Edge	4.95	ft
Beveled	4.72	ft
Tapered	4.53	ft

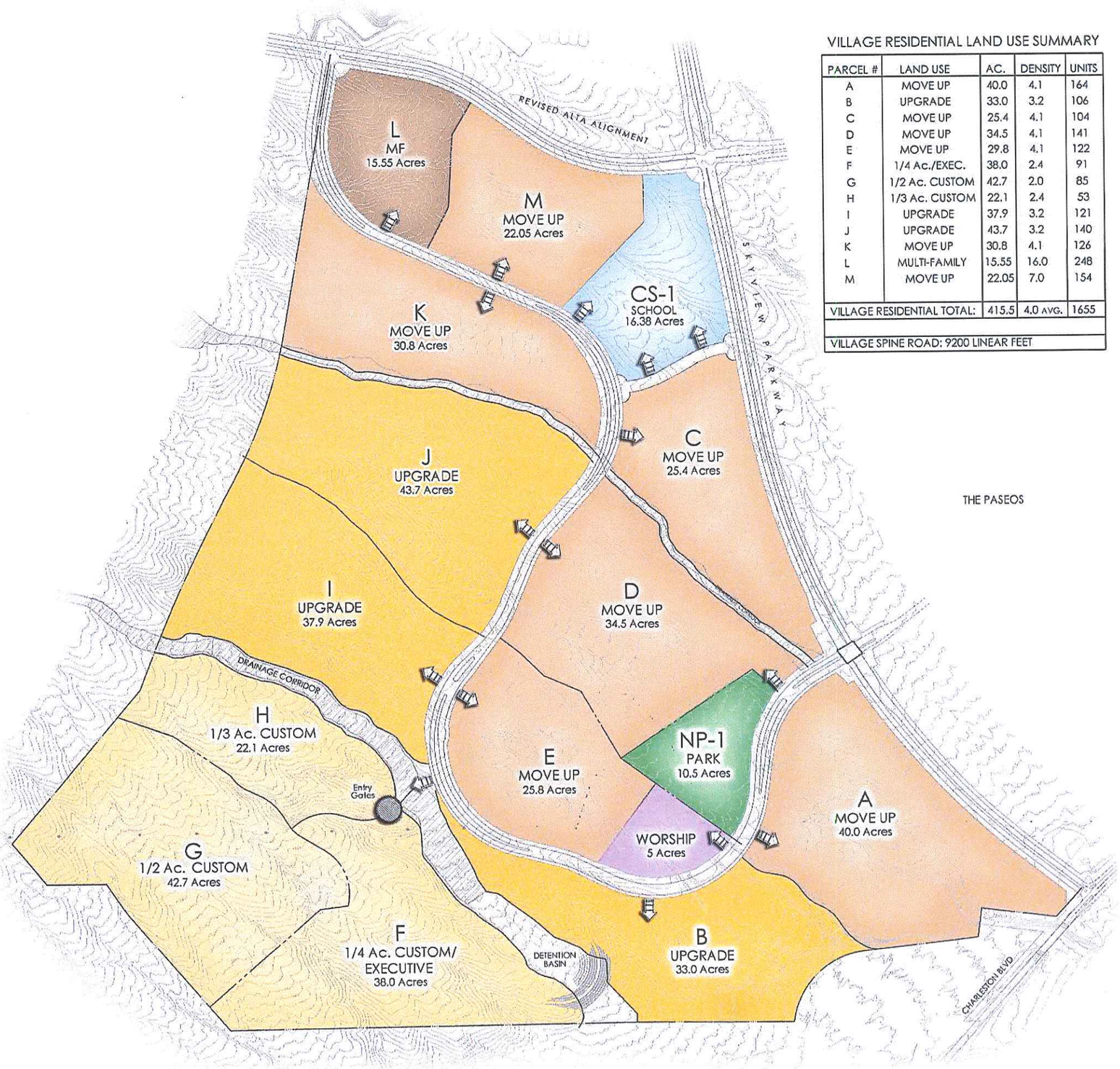
OUTLET

Head Water	N/A	ft
Critical	6.00	ft
Velocity	4.90	ft/s

G. C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS

APPENDIX C

Reference Materials



VILLAGE RESIDENTIAL LAND USE SUMMARY

PARCEL #	LAND USE	AC.	DENSITY	UNITS
A	MOVE UP	40.0	4.1	164
B	UPGRADE	33.0	3.2	106
C	MOVE UP	25.4	4.1	104
D	MOVE UP	34.5	4.1	141
E	MOVE UP	29.8	4.1	122
F	1/4 Ac./EXEC.	38.0	2.4	91
G	1/2 Ac. CUSTOM	42.7	2.0	85
H	1/3 Ac. CUSTOM	22.1	2.4	53
I	UPGRADE	37.9	3.2	121
J	UPGRADE	43.7	3.2	140
K	MOVE UP	30.8	4.1	126
L	MULTI-FAMILY	15.55	16.0	248
M	MOVE UP	22.05	7.0	154
VILLAGE RESIDENTIAL TOTAL:		415.5	4.0 AVG.	1655
VILLAGE SPINE ROAD: 9200 LINEAR FEET				

VILLAGE 24

SUMMERLIN

LAND USE CONCEPT

NORTH

MARCH 27, 2014

SCALE: 1" = 200'

0 200 400

GREEY | PICKETT
landscape architecture | community design

RESPONSE TO COMMENTS
ON THE
TECHNICAL DRAINAGE STUDY
FOR
SUMMERLIN VILLAGE 24
UNIT 2 IMPROVEMENTS

VOLUME I of III

62A-24-212
62A-24-230

May 2007

Prepared for:

Howard Hughes Corporation, Inc.
a Delaware Corporation
10000 West Charleston Boulevard, Suite 200
Las Vegas, Nevada 89135
Phone: (702) 791-4300
Fax: (702) 791-4450

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM			DATE: June 9, 2014
TO: **Land Development Services** Department of Public Works			FROM: Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for:		**COPIES TO:**
Summerlin Village 24 Unit 2 Improvements			G.C. Wallace, Inc.
Cross Streets:	Sky Vista & Alta Drive		Howard Hughes Corp.
File Number:	F:\Depot\DSMemos\DS4136C.doc		Bart Anderson, P.E., DevCo
Parcel Number:	137-22-000-015		CCRFCD
Zoning Action:			
FEMA Flood Zone	YES	NO X	
Proposed Storm Drain	YES X	NO	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Transaction #
1st Submittal	2/21/2007	3/29/2007	Not Approved	$400.00	63487: $400
2nd Submittal	5/4/2007	5/29/2007	Not Approved	$400.00	68552: $400
3rd Submittal	5/15/2014 & 6/5/2014	6/9/2014	See Comments Below	$400.00	357117: $400
			TOTAL FEES (LDDRS):	$1,200.00	----

REMARKS:

The Drainage Study for the subject project has been reviewed and:

	is approved subject to conformance to all City standards and the following conditions:
	must be resubmitted or supplemented including the following:
X	is conditionally approved subject to Clark County Regional Flood Control District concurrence.
	is conditionally approved subject to Clark County Public Works Department concurrence.

1. **This drainage study is acceptable in concept**; however, *City of Las Vegas* will not formally accept the study until the *Clark County Regional Flood Control District* (CCRFCD) has issued a letter of concurrence. The engineer should contact the CCRFCD to confirm that they have begun their review.
2. Please note that any future technical drainage study submittals that differ from the Master Drainage Study (ie. Changes in pods, infrastructure, flows etc.) will require an update to the Master Drainage Study and this update must be approved by the *City of Las Vegas Flood Control Section* prior to final approval of technical drainage study.
3. Structural plans for the storm drain improvements must be submitted for review. Provide a soils report, structural calculations and specifications, two wet stamped structural sets, and a grading plan to the *Building Department* for processing. The engineer must provide a copy of *Building Department* approval of the structures to *Flood Control* prior to final acceptance of the drainage study.
4. Please obtain necessary 404 permits from Army Corps of Engineers and provide a copy of the permit to Flood Control prior to issuance of the grading permit. The contact information for Army Corps of Engineers is listed below:

Steven W. Roberts
Chief, Regulatory Field Office
US Army Corps of Engineers
321 North Mall Drive
Suite L-101
St. George, UT 84790

(435) 986-3979 (Office)
(435) 986-3981 (FAX)
steven.w.roberts@usace.army.mil

5. The project proposes to build temporary drainage facilities. Prior to final plan approval the developer must complete a maintenance and liability agreement for the interim drainage improvements and post a minimum maintenance bond of $25,000 or 25-percent of the construction cost for the improvements, whichever is greater. The engineer must submit an estimate of the quantities for constructing the facility and an 8.5-inch by 11-inch exhibit that adequately shows the location and limits of the drainage facility to *Flood Control* for approval. Once the drainage study is conditionally approved, the engineer should contact the City's Land Development Section (229-6371) to begin the agreement process.

NOTE: Please be advised that all land surface area disturbances over 1 acre or any area adjacent to a water way must submit to the Nevada Division of Environmental Protection a "Notice of Intent" to discharge that certifies a stormwater pollution prevention plan has been developed and is maintained on site; for inclusion in the Stormwater General Permit No. NVR100000. A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. For more information, including forms and applications see http://ndep.nv.gov/bwpc/storm01.htm or call (775) 687-9429.

END OF REMARKS
Osk/ays

T/R/S: T20S/R59E/33 and 34
AREA K-22

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1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              JUN   1998               *
*            VERSION 4.1                *
*                                       *
*  RUN DATE   20APR07  TIME  07:50:02   *
*                                       *
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*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*          (916) 756-1104               *
*                                       *
*****************************************
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

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1                                   HEC-1 INPUT                                    PAGE  1

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

              *DIAGRAM
  1           ID   ****************************************************************
  2           ID   * ............................................................ *
  3           ID   * :                  SUMMERLIN VILLAGE 24                    : *
  4           ID   * :                   UNIT 2 IMPROVEMENTS                    : *
  5           ID   * :                   ULTIMATE CONDITIONS                    : *
  6           ID   * :                                                          : *
  7           ID   * :..........................................................: *
  8           ID   * :              RETURN PERIOD_ _ _ _100/10-YEAR             : *
  9           ID   * :              DISTRIBUTUION_ _ _ _6-HOUR SDN3             : *
 10           ID   * :              PROJECT NO_ _ _ _ _ 62A-24-212, 62A-24-230  : *
 11           ID   * :              FILENAME_ _ _ _ _ _ ULT-V24R.H1             : *
 12           ID   * :              DATE_ _ _ _ _ _ _ _ 1/11/06                 : *
 13           ID   * :..........................................................: *
 14           ID
 15           ID                 REFERENCED HEC-1 MODELS:
 16           ID    1) 2006 SUMMERLIN WEST PLANNING AREA FLOOD CONTROL MASTER PLAN UPDATE
 17           ID    2) CONCEPTUAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 24
 18           ID    3) TECHNICAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 24 UNIT 1 IMPROVEMENTS
 19           ID        INCLUDING PARCELS A AND B MASS GRADING
 20           ID
 21           ID                DEPTH AREA REDUCTION FACTOR
 22           ID      DARFS RERERENCED FROM THE CONCEPTUAL DRAINAGE STUDY
 23           ID
 24           ID                 SQ MILES            DARF
 25           ID                     0-.1            1.0
 26           ID                    .1-.3           .988
 27           ID                    .3-.5           .980
 28           ID                    .5-.7           .976
 29           ID                    .7-.9           .972
 30           ID                   10-YEAR          .575
 31           ID
 32           ID
 33           IT       5       0       0     300
 34           IO       5
 35           IN       5       0       0
 36           JR    PREC       1    .988    .980    .976    .972    .575
              *
              * BEGIN ALTA DRIVE

 37           KK    ST1*
 38           KM   SUBBASIN ST1* ALTA DRIVE FROM WEST OF CROSSBRIDGE TO SKY VISTA
              *  REFERENCED FROM THE CONCEPTUAL DRAINAGE STUDY
 39           KM   AREA REVISED FOR THE UNIT 2 IMPROVEMENTS
 40           BA  .01633
 41           PB    3.34
 42           PC    .000    .020    .057    .070    .087    .108    .124    .130    .130    .130
 43           PC    .130    .130    .130    .133    .140    .142    .148    .158    .172    .181
 44           PC    .190    .197    .199    .200    .201    .204    .214    .229    .241    .249
 45           PC    .251    .256    .270    .278    .281    .283    .295    .322    .352    .409
 46           PC    .499    .590    .710    .744    .781    .812    .819    .835    .851    .856
 47           PC    .860    .868    .876    .888    .910    .926    .937    .950    .970    .976
 48           PC    .982    .985    .987    .989    .990    .993    .993    .994    .995    .998
 49           PC    .998    .999    1.00
 50           LS       0      94
```

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1                                   HEC-1 INPUT                                    PAGE  2

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 51           UD   0.093
              *
              * BEGIN RUNOFF TO CROSSBRIDGE DRIVE

 52           KK    7-7A
 53           KM    SUBBASIN 7-7A
              *  REFERENCED FROM THE 2006 SUMMERLIN WEST PLANNING AREA FLOOD CONTROL MASTER PL
 54           BA    .081
 55           PB    3.44
 56           LS       0    88.7
```

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 57          UD    .143
             *

 58          KK   7-7Ar
 59          KM   ROUTE 7-7Ar TO CP1
 60          RD    1845    0.07   0.016            TRAP       0      50
             *

 61          KK       L
 62          KM   SUBBASIN PARCEL L
             *  REFERENCED FROM THE CONCEPTUAL DRAINAGE STUDY
 63          BA  .02344
 64          PB    3.34
 65          LS       0      92
 66          UD   0.101
             *

 67          KK      M*
 68          KM   SUBBASIN PARCEL M
 69          KM   PARCEL M IS 30.3 ACRES - USE 2/3 OF AREA (20.2 ACRES)
             *  REFERENCED FROM THE CONCEPTUAL DRAINAGE STUDY
 70          BA  .03156
 71          PB    3.34
 72          LS       0      92
 73          UD   0.138
             *

 74          KK     CP1
 75          KM   CONCENTRATION POINT CP1
 76          KM   COMBINE 7-7Ar, M* AND L IN CROSSBRIDGE DRIVE
 77          HC       3
             *

 78          KK    CP1r
 79          KM   ROUTE CP1 TO CP2
 80          RD     785   0.024   0.016            TRAP       0      50
             *

 81          KK       K
 82          KM   SUBBASIN PARCEL K
             *  REFERENCED FROM THE CONCEPTUAL DRAINAGE STUDY
 83          BA  .04641
 84          PB    3.34
 85          LS       0      91
 86          UD   0.124
             *
1                                        HEC-1 INPUT                                        PAGE  3

LINE         ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

 87          KK    ST4*
 88          KM   SUBBASIN ST4* CROSSBRIDGE DRIVE
             *  REFERENCED FROM THE CONCEPTUAL DRAINAGE STUDY
 89          KM   REVISED FOR THE UNIT 2 IMPROVEMENTS
 90          BA  .01014
 91          PB    3.34
 92          LS       0      94
 93          UD   0.090
             *

 94          KK     CP2
 95          KM   CONCENTRATION POINT CP2
 96          KM   COMBINE K, ST4* AND CP1r IN CROSSBRIDGE DRIVE
 97          HC       3
             *

 98          KK    CP2r
 99          KM   ROUTE CP2 TO CP3
100          RD     915    .045    .013            CIRC     6.0
             *

101          KK    ST6*
102          KM   SUBBASIN ST6
103          KM   SUNCREEK ROAD
             *  REFERENCED FROM THE CONCEPTUAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 24
             *  AREA SLIGHTLY REVISED
104          BA  .00284
105          PB    3.34
106          LS       0      94
107          UD   0.075
             *

108          KK     CP3
109          KM   CONCENTRATION POINT CP3
110          KM   COMBINE ST6* AND CP2 IN SUNCREEK ROAD
111          HC       2
             *

112          KK      M*
113          KM   SUBBASIN PARCEL M
114          KM   PARCEL M IS 30.3 ACRES - USE 1/3 OF AREA FOR ACTUAL FLOW VALUE IN
115          KM   SKY VISTA AND CROSSBRIDGE STORM DRAINS
             *  REFERENCED FROM THE 2006 SUMMERLIN WEST PLANNING AREA FLOOD CONTROL MASTER PL
116          BA  .01578
117          PB    3.34
118          LS       0      92
119          UD   0.138
             *
1                                        HEC-1 INPUT                                        PAGE  4

LINE         ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

120          KK    ES-1
121          KM   SUBBASIN PARCEL ES-1
             *  REFERENCED FROM THE CONCEPTUAL DRAINAGE STUDY
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122          BA  .01883
123          PB   3.34
124          LS     0      92
125          UD  0.103
             *
126          KK    CP4
127          KM  CONCENTRATION POINT CP4
128          KM  COMBINE M* AND ES-1 IN SKY VISTA DRIVE
129          HC     2
             *
130          KK    CP5
131          KM  CONCENTRATION POINT CP5
132          KM  COMBINE CP3 AND CP4 AT INTERSECTION OF SKY VISTA AND SUNCREEK
133          HC     2
             *
134          KK   CP5r
135          KM  ROUTE CP5 TO CP6
136          RD   1780    .040    .013            CIRC     6.5
             *
137          KK    ST2
138          KM  SUBBASIN ST2 SKY VISTA DRIVE FROM ALTA DRIVE TO CROSSBRIDGE DRIVE
             *  REFERENCED FROM THE CONCEPTUAL DRAINAGE STUDY
139          BA  .01563
140          PB   3.34
141          LS     0      94
142          UD  0.140
             *
143          KK    CP6
144          KM  CONCENTRATION POINT CP6
145          KM  COMBINE CPRr AND ST2 IN SKY VISTA AT CROSSBRIDGE ROAD
146          KM  START OF UNIT 1 IMPROVEMENTS
147          HC     2
             *
             * END RUNOFF TO SKY VISTA STORM DRAIN
             *
             * BEGIN RUNOFF TO MULTIPLE CULVERTS AT CROSSBRIDGE DRIVE
             *
148          KK   7-2B
149          KM  SUBBASIN 7-2B
             *  REFERENCED FROM THE 2006 SUMMERLIN WEST PLANNING AREA FLOOD CONTROL MASTER PL
150          BA  0.0944
151          PB   3.58
152          LS     0      88
153          UD  0.149
             *
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LINE         ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

154          KK  7-2Br
             *  REFERENCED FROM THE 2006 SUMMERLIN WEST PLANNING AREA FLOOD CONTROL MASTER PL
155          KM  ROUTE 7-2Br THROUGH 7-2A TO CRR1
156          KM  SLOPE 7.1%
157          KM   NSTEPS     K       X
158          RM      2     .129    0.15
             *
159          KK   7-2A
160          KM  SUBBASIN 7-2A (SUBBASIN OFF5 IN THE CONCEPTUAL DRAINAGE STUDY)
             *  REFERENCED FROM THE 2006 SUMMERLIN WEST PLANNING AREA FLOOD CONTROL MASTER PL
161          BA   .4513
162          PB   3.50
163          LS     0     88.2
164          UD  0.247
             *
165          KK   CRR1
166          KM  CONCENTRATION POINT CRR1
167          KM  COMBINE 7-2Br AND 7-2A NEAR VILLAGE 24 BOUNDARY
168          HC     2
             *
169          KK    FS1
170          KM  DIVERT 320 CFS TO COMBINATION POINT CRR2
             *  REFERENCED FROM THE 2006 SUMMERLIN WEST PLANNING AREA FLOOD CONTROL MASTER PL
             *  REVISED FOR THE UNIT 2 IMPROVEMENTS TO MATCH FLOW WHERE CROSSBRIDGE AND SKY V
             *  STORM DRAINS TIE TOGETHER
171          DT   DIV1
172          DI     0      841
173          DQ     0      287
             *
174          KK  CRR1r
175          KM  ROUTE CRR1 THROUGH SUBBASINS COS-1 AND COS-2 TO CP7
             *  REFERENCED FROM THE 2006 SUMMERLIN WEST PLANNING AREA FLOOD CONTROL MASTER PL
176          KM  SLOPE 5.8%
177          KM  NSTEPS     K       X
178          RM      1     .058    0.15
             *
179          KK  COS-1
180          KM  SUBBASIN COS-1 OPEN SPACE AREA UPSTREAM OF CROSSBRIDGE
             *  REFERENCED FROM THE CONCEPTUAL DRAINAGE STUDY
181          BA  .00484
182          PB   3.34
183          LS     0      86
184          UD  0.083
             *
```

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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  185     KK     CD1
  186     KM   SUBBASIN CD1
  187     KM   PORTION OF CROSSBRIDGE DRIVE
  188     BA  .00683
  189     PB    3.34
  190     LS       0       94
  191     UD   0.065
          *

  192     KK       C
  193     KM   SUBBASIN PARCEL C
          *  REFERENCED FROM THE CONCEPTUAL DRAINAGE STUDY
  194     BA  .04038
  195     PB    3.34
  196     LS       0       90
  197     UD   0.163
          *

  198     KK   COS-2
  199     KM   SUBBASIN COS-2 OPEN SPACE AREA DOWNSTREAM OF CROSSBRIDGE
          *  REFERENCED FROM THE CONCEPTUAL DRAINAGE STUDY
  200     BA  .00344
  201     PB    3.34
  202     LS       0       86
  203     UD   0.085
          *

  204     KK     CP7
  205     KM   CONCENTRATION POINT CP7 (AT EXISTING 7' BY 7' OPEN INLET)
  206     KM   COMBINE CRR1r, COS-1, COS-2, C AND CD1
  207     HC       5
          *

  208     KK     CP8
  209     KM   CONCENTRATION POINT CP8 (AT EXISTING STORM DRAIN IN CROSSBRIDGE)
  210     KM   COMBINE CP7 (FLOW TO OPEN RCB INLET) AND CP6 (FLOW IN SKY VISTA STORM DRAIN)
  211     HC       2
          *
          * END RUNOFF TO EXISTING UNIT 1 IMPROVEMENTS
          *
          * BEGIN RUNOFF TO EXISTING WASH SOUTHWEST OF CROSSBRIDGE DRIVE
          *

  212     KK    7-5A
  213     KM   SUBBASIN 7-5A WEST OF VILLAGE 24
  214     BA   0.297
  215     PB    3.43
  216     LS       0    87.0
  217     UD   0.154
          *

1                                   HEC-1 INPUT                                  PAGE  7

LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  218     KK   RETD1
  219     KM   RETRIEVE DIVERTED FLOW FROM CRR1
  220     DR    DIV1
          *

  221     KK   DIV1r
          *  REFERENCED FROM THE 2006 SUMMERLIN WEST PLANNING AREA FLOOD CONTROL MASTER PL
  222     KM   ROUTE DIVERTED FLOW FROM CRR1 TO CRR2 ALONG WEST BOUNDARY OF VILLAGE 24
  223     KM    LENGTH  SLOPE  ROUGHNESS        SHAPE       BW       SS
  224     RD    1890    .010    .016             TRAP        0       25
          *

  225     KK    CRR2
  226     KM   CONCENTRATION POINT CRR2
  227     KM   COMBINE 7-5A AND DIV1r NEAR VILLAGE 24 BOUNDARY
  228     HC       2
          *

  229     KK   CRR2r
  230     KM   ROUTE CRR2 THROUGH SUBBASINS COS-3 AND COS-4 TO CP11
          *  REFERENCED FROM THE 2006 SUMMERLIN WEST PLANNING AREA FLOOD CONTROL MASTER PL
  231     KM   NSTEPS    K       X
  232     RM       1    .054    0.15
          *

  233     KK       J
  234     KM   SUBBASIN PARCEL J
          *  REFERENCED FROM THE CONCEPTUAL DRAINAGE STUDY
  235     BA  .06713
  236     PB    3.34
  237     LS       0       91
  238     UD   0.165
          *

  239     KK     CD2
  240     KM   SUBBASIN CD2
  241     KM   PORTION OF CROSSBRIDGE DRIVE
  242     BA  .00509
  243     PB    3.34
  244     LS       0       94
  245     UD   0.099
          *

  246     KK     CP9
  247     KM   CONCENTRATION POINT CP9
  248     KM   COMBINE J AND CD2 IN STORM DRAIN IN CROSSBRIDGE DRIVE WITH OUTFALL IN EXISTIN
  249     HC       2
          *

1                                   HEC-1 INPUT                                  PAGE  8
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 250          KK        I
 251          KM    SUBBASIN PARCEL I WITH OUTFALL IN EXISTING WASH
              *   REFERENCED FROM THE CONCEPTUAL DRAINAGE STUDY
 252          BA   .06328
 253          PB     3.34
 254          LS        0       91
 255          UD    0.143
              *

 256          KK    COS-3
 257          KM    SUBBASIN PARCEL COS-3 OPEN SPACE (EXISTING WASH)
              *   REFERENCED FROM THE CONCEPTUAL DRAINAGE STUDY
 258          BA   .00813
 259          PB     3.34
 260          LS        0       86
 261          UD    0.078
              *

 262          KK    CP10A
 263          KM    CONCENTRATION POINT CP10
 264          KM    COMBINE CP9, I AND COS-3 IN EXISTING WASH NEAR CROSSBRIDGE
 265          HC        3
              *

 266          KK        G
 267          KM    SUBBASIN PARCEL G WITH STORM DRAIN TO EXISTING WASH
              *   REFERENCED FROM THE CONCEPTUAL DRAINAGE STUDY
 268          BA   .06672
 269          PB     3.34
 270          LS        0       86
 271          UD    0.159
              *

 272          KK        H
 273          KM    SUBBASIN PARCEL H WITH OUTFALL TO EXISTING WASH
              *   REFERENCED FROM THE CONCEPTUAL DRAINAGE STUDY
 274          BA   .03453
 275          PB     3.34
 276          LS        0       86
 277          UD    0.106
              *

 278          KK    CP10B
 279          KM    REPEAT COMBINE FLOWS AT CONCENTRATION POINT CP10
 280          KM    COMBINE CP10A, G AND H IN EXISTING WASH NEAR CROSSBRIDGE
 281          HC        3
              *

 282          KK        F
 283          KM    SUBBASIN PARCEL F WITH OUTFALL TO EXISTING WASH
              *   REFERENCED FROM THE CONCEPTUAL DRAINAGE STUDY
 284          BA   .05938
 285          PB     3.34
 286          LS        0       86
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 287          UD    0.141
              *

 288          KK    COS-4
 289          KM    SUBBASIN PARCEL COS-4 OPEN SPACE (EXISTING WASH)
              *   REFERENCED FROM THE CONCEPTUAL DRAINAGE STUDY
 290          BA   .01422
 291          PB     3.34
 292          LS        0       86
 293          UD    0.068
              *

 294          KK     CP11
 295          KM    CONCENTRATION POINT CP11 AT SOUTHERN BOUNDARY OF VILLAGE 24
 296          KM    COMBINE CRR2r, CP10, F AND COS-4 IN EXISTING WASH
 297          HC        4
              *
              * END RUNOFF TO SOUTH BOUNDARY OF SITE
              * BEGIN RUNOFF TO EXISTING UNIT 1 CROSSBRIDGE STREET IMPROVEMENTS
              *

 298          KK      CD3
 299          KM    SUBBASIN CD3
 300          KM    PORTION OF CROSSBRIDGE DRIVE - DRAINS OFFSITE TO UNIT 1 IMPROVEMENTS
 301          BA   .00248
 302          PB     3.34
 303          LS        0       94
 304          UD    0.050
              *
              * END FLOW TO EXISTING UNIT 1 CROSSBRIDGE DRIVE
              *
              * REPEAT FLOW FROM PARCELS M* AND ES-1 USING THE AREA OF 2/3 OF M
              * THIS COMBINED FLOW WILL BE USED IN THE SF6 ANALYSIS OF THE SKY VISTA
              * STORM DRAIN NORTH OF SUNCREEK ROAD
              *

 305          KK       M*
 306          KM    SUBBASIN PARCEL M
 307          KM    PARCEL M IS 30.3 ACRES - USE 2/3 OF AREA FOR FLOW VALUE TO USE IN
 308          KM    ANALYSIS OF SKY VISTA STORM DRAIN (THE PORTION NORTH OF SUNCREEK ROAD)
              *   REFERENCED FROM THE 2006 SUMMERLIN WEST PLANNING AREA FLOOD CONTROL MASTER PL
 309          BA   .03156
 310          PB     3.34
 311          LS        0       92
 312          UD    0.138
```

```
                    *
        313         KK    ES-1
        314         KM   SUBBASIN PARCEL ES-1
                    *  REFERENCED FROM THE CONCEPTUAL DRAINAGE STUDY
        315         BA  .01883
        316         PB    3.34
        317         LS       0       92
        318         UD   0.103
                    *
1                                                HEC-1 INPUT                                                PAGE 10

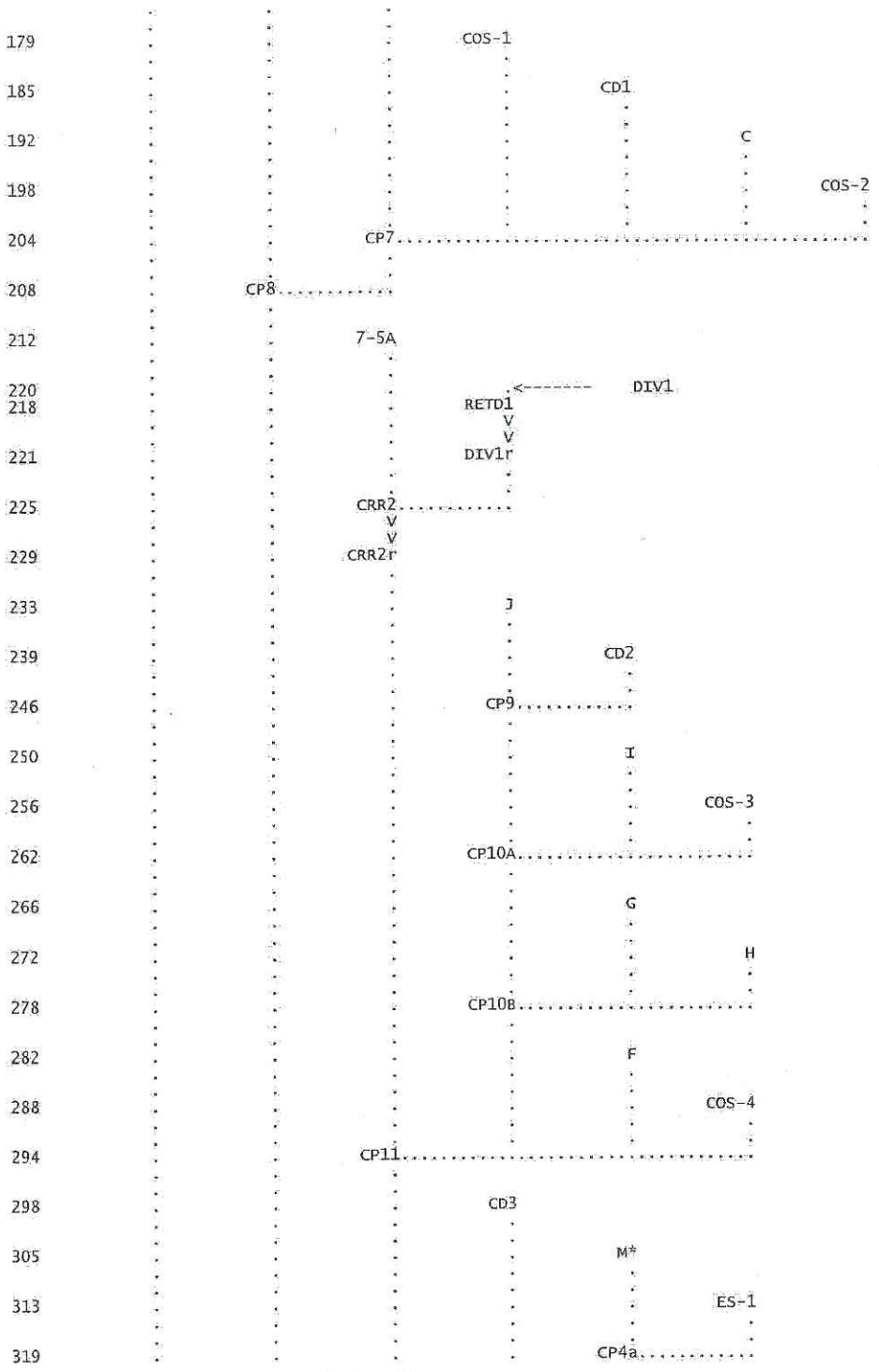
      LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

        319         KK    CP4a
        320         KM   CONCENTRATION POINT CP4
        321         KM   REPEAT COMBINE M* AND ES-1 IN SKY VISTA DRIVE WITH 2/3 OF PARCEL M
        322         HC       2
                    *
                    * END FILE
                    *
        323         ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

    37        ST1*
                .
                .
    52          .        7-7A
                .           V
                .           V
    58          .       7-7Ar
                .           .
                .           .
    61          .           .           L
                .           .           .
                .           .           .
    67          .           .           .          M*
                .           .           .           .
                .           .           .           .
    74          .         CP1.......................
                .           V
                .           V
    78          .        CP1r
                .           .
                .           .
    81          .           .           K
                .           .           .
                .           .           .
    87          .           .           .        ST4*
                .           .           .           .
                .           .           .           .
    94          .         CP2.......................
                .           V
                .           V
    98          .        CP2r
                .           .
                .           .
   101          .           .        ST6*
                .           .           .
                .           .           .
   108          .         CP3............
                .           .
                .           .
   112          .           .          M*
                .           .           .
                .           .           .
   120          .           .           .        ES-1
                .           .           .           .
                .           .           .           .
   126          .           .         CP4............
                .           .           .
                .           .           .
   130          .         CP5............
                .           V
                .           V
   134          .        CP5r
                .           .
                .           .
   137          .           .         ST2
                .           .           .
                .           .           .
   143          .         CP6............
                .           .
                .           .
   148          .           .        7-2B
                .           .           V
                .           .           V
   154          .           .       7-2Br
                .           .           .
                .           .           .
   159          .           .           .        7-2A
                .           .           .           .
                .           .           .           .
   165          .           .        CRR1............
                .           .           .
                .           .           .
   171          .           .           .------->    DIV1
   169          .           .         FS1
                .           .           V
                .           .           V
   174          .           .       CRR1r
```

```
179                                  COS-1
185                                          CD1
192                                                  C
198                                                          COS-2
204                                  CP7
208                          CP8
212                                  7-5A
220                                          <-------   DIV1
218                                  RETD1
                                         V
                                         V
221                                  DIV1r
225                                  CRR2
                                         V
                                         V
229                                  CRR2r
233                                          J
239                                                  CD2
246                                          CP9
250                                                  I
256                                                          COS-3
262                                  CP10A
266                                                  G
272                                                          H
278                                  CP10B
282                                                  F
288                                                          COS-4
294                                  CP11
298                                          CD3
305                                                  M*
313                                                          ES-1
319                                                  CP4a
```



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              JUN   1998               *
*           VERSION 4.1                 *
*                                       *
*  RUN DATE   20APR07  TIME  07:50:02   *
*                                       *
*****************************************
```

```
*****************************************
*                                       *
*   U.S. ARMY CORPS OF ENGINEERS        *
*   HYDROLOGIC ENGINEERING CENTER       *
*         609 SECOND STREET             *
*      DAVIS, CALIFORNIA 95616          *
*          (916) 756-1104               *
*                                       *
*****************************************
```

```
*****************************************************************
*                                                               *
*                  SUMMERLIN VILLAGE 24                         *
*                   UNIT 2 IMPROVEMENTS                         *
*                   ULTIMATE CONDITIONS                         *
*                                                               *
*                                                               *
*                RETURN PERIOD_ _ _ _100/10-YEAR                *
*                DISTRIBUTUION_ _ _ _6-HOUR SDN3                *
```

```
* :              PROJECT NO_ _ _ _ _ 62A-24-212, 62A-24-230  : *
* :              FILENAME_ _ _ _ _ _ ULT-V24R.H1             : *
* :              DATE_ _ _ _ _ _ _ _ 1/11/06                 : *
* :.......................................................: *
```

REFERENCED HEC-1 MODELS:
1) 2006 SUMMERLIN WEST PLANNING AREA FLOOD CONTROL MASTER PLAN UPDATE
2) CONCEPTUAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 24
3) TECHNICAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 24 UNIT 1 IMPROVEMENTS INCLUDING PARCELS A AND B MASS GRADING

DEPTH AREA REDUCTION FACTOR
DARFS RERERENCED FROM THE CONCEPTUAL DRAINAGE STUDY

SQ MILES	DARF
0-.1	1.0
.1-.3	.988
.3-.5	.980
.5-.7	.976
.7-.9	.972
10-YEAR	.575

```
34 IO          OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE

   IT          HYDROGRAPH TIME DATA
                     NMIN          5  MINUTES IN COMPUTATION INTERVAL
                    IDATE     1    0  STARTING DATE
                    ITIME       0000  STARTING TIME
                       NQ        300  NUMBER OF HYDROGRAPH ORDINATES
                   NDDATE     2    0  ENDING DATE
                   NDTIME       0055  ENDING TIME
                    ICENT         19  CENTURY MARK

                COMPUTATION INTERVAL     .08 HOURS
                     TOTAL TIME BASE   24.92 HOURS

         ENGLISH UNITS
              DRAINAGE AREA          SQUARE MILES
              PRECIPITATION DEPTH    INCHES
              LENGTH, ELEVATION      FEET
              FLOW                   CUBIC FEET PER SECOND
              STORAGE VOLUME         ACRE-FEET
              SURFACE AREA           ACRES
              TEMPERATURE            DEGREES FAHRENHEIT

   JP          MULTI-PLAN OPTION
                    NPLAN          1  NUMBER OF PLANS

   JR          MULTI-RATIO OPTION
                  RATIOS OF PRECIPITATION
                 1.00      .99      .98      .98      .97      .57
1
```

PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN		RATIOS APPLIED TO PRECIPITATION RATIO 1 1.00	RATIO 2 .99	RATIO 3 .98	RATIO 4 .98	RATIO 5 .97	RATIO 6 .57
HYDROGRAPH AT +	ST1*	.02	1	FLOW	37.	37.	37.	36.	36.	19.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT +	7-7A	.08	1	FLOW	153.	150.	149.	148.	147.	70.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
ROUTED TO +	7-7Ar	.08	1	FLOW	147.	145.	142.	141.	141.	65.
				TIME	3.58	3.58	3.58	3.58	3.58	3.67
HYDROGRAPH AT +	L	.02	1	FLOW	50.	49.	49.	48.	48.	24.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT +	M*	.03	1	FLOW	63.	62.	62.	61.	61.	31.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
3 COMBINED AT +	CP1	.14	1	FLOW	256.	253.	249.	248.	246.	119.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
ROUTED TO +	CP1r	.14	1	FLOW	249.	245.	242.	241.	240.	114.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT +	K	.05	1	FLOW	91.	90.	89.	89.	88.	44.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT +	ST4*	.01	1	FLOW	24.	23.	23.	23.	23.	12.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT +	CP2	.19	1	FLOW	360.	355.	351.	349.	347.	169.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58

ROUTED TO	CP2r	.19	1	FLOW	357.	352.	348.	346.	345.	167.
+				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	ST6*	.00	1	FLOW	7.	7.	7.	7.	7.	4.
+				TIME	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT	CP3	.20	1	FLOW	363.	358.	353.	351.	350.	170.
+				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	M*	.02	1	FLOW	32.	31.	31.	31.	31.	16.
+				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	ES-1	.02	1	FLOW	40.	39.	39.	39.	38.	19.
+				TIME	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT	CP4	.03	1	FLOW	69.	68.	67.	67.	67.	34.
+				TIME	3.50	3.50	3.50	3.50	3.50	3.58
2 COMBINED AT	CP5	.23	1	FLOW	432.	426.	420.	418.	416.	204.
+				TIME	3.58	3.58	3.58	3.58	3.58	3.58
ROUTED TO	CP5r	.23	1	FLOW	426.	420.	414.	413.	411.	199.
+				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	ST2	.02	1	FLOW	33.	32.	32.	32.	32.	17.
+				TIME	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT	CP6	.25	1	FLOW	459.	452.	446.	444.	443.	216.
+				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	7-2B	.09	1	FLOW	182.	179.	177.	176.	175.	82.
+				TIME	3.58	3.58	3.58	3.58	3.58	3.58
ROUTED TO	7-2Br	.09	1	FLOW	162.	160.	158.	157.	156.	73.
+				TIME	3.67	3.67	3.67	3.67	3.67	3.75
HYDROGRAPH AT	7-2A	.45	1	FLOW	706.	695.	687.	684.	680.	315.
+				TIME	3.67	3.67	3.67	3.67	3.67	3.67
2 COMBINED AT	CRR1	.55	1	FLOW	869.	855.	845.	841.	836.	386.
+				TIME	3.67	3.67	3.67	3.67	3.67	3.67
DIVERSION TO	DIV1	.55	1	FLOW	296.	292.	289.	287.	285.	132.
+				TIME	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT	FS1	.55	1	FLOW	572.	563.	557.	554.	551.	255.
+				TIME	3.67	3.67	3.67	3.67	3.67	3.67
ROUTED TO	CRR1r	.55	1	FLOW	557.	548.	542.	539.	536.	249.
+				TIME	3.75	3.75	3.75	3.75	3.75	3.75
HYDROGRAPH AT	COS-1	.00	1	FLOW	9.	9.	9.	9.	9.	4.
+				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT	CD1	.01	1	FLOW	17.	17.	17.	17.	17.	9.
+				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT	C	.04	1	FLOW	74.	73.	72.	72.	71.	34.
+				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	COS-2	.00	1	FLOW	6.	6.	6.	6.	6.	3.
+				TIME	3.50	3.50	3.50	3.50	3.50	3.50
5 COMBINED AT	CP7	.60	1	FLOW	620.	610.	604.	601.	597.	280.
+				TIME	3.75	3.75	3.75	3.75	3.75	3.75
2 COMBINED AT	CP8	.85	1	FLOW	1018.	1001.	990.	985.	980.	468.
+				TIME	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT	7-5A	.30	1	FLOW	520.	511.	506.	503.	500.	225.
+				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	RETD1	.00	1	FLOW	296.	292.	289.	287.	285.	132.
+				TIME	3.67	3.67	3.67	3.67	3.67	3.67
ROUTED TO	DIV1r	.00	1	FLOW	292.	284.	280.	278.	277.	129.
+				TIME	3.75	3.75	3.75	3.75	3.75	3.75
2 COMBINED AT	CRR2	.30	1	FLOW	741.	728.	720.	716.	713.	313.
+				TIME	3.58	3.58	3.58	3.58	3.58	3.67

ROUTED TO											
+	CRR2r	.30	1	FLOW	729.	716.	709.	705.	702.	310.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT											
+	J	.07	1	FLOW	126.	124.	123.	122.	121.	60.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	CD2	.01	1	FLOW	11.	11.	11.	11.	11.	6.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT											
+	CP9	.07	1	FLOW	136.	134.	133.	132.	132.	66.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	I	.06	1	FLOW	123.	121.	120.	119.	119.	59.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	COS-3	.01	1	FLOW	16.	15.	15.	15.	15.	7.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT											
+	CP10A	.14	1	FLOW	272.	268.	265.	264.	262.	130.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	G	.07	1	FLOW	108.	106.	105.	104.	103.	45.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	H	.03	1	FLOW	59.	58.	58.	57.	57.	25.
				TIME	3.50	3.50	3.50	3.50	3.50	3.58
3 COMBINED AT											
+	CP10B	.24	1	FLOW	438.	431.	426.	424.	422.	200.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	F	.06	1	FLOW	99.	97.	96.	96.	95.	41.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	COS-4	.01	1	FLOW	29.	28.	28.	28.	27.	12.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
4 COMBINED AT											
+	CP11	.62	1	FLOW	1210.	1189.	1176.	1170.	1164.	519.
				TIME	3.58	3.58	3.58	3.58	3.58	3.67
HYDROGRAPH AT											
+	CD3	.00	1	FLOW	7.	7.	6.	6.	6.	3.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT											
+	M*	.03	1	FLOW	63.	62.	62.	61.	61.	31.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT											
+	ES-1	.02	1	FLOW	40.	39.	39.	39.	38.	19.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT											
+	CP4a	.05	1	FLOW	101.	99.	98.	98.	97.	50.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58

1

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	INTERPOLATED TO COMPUTATION INTERVAL DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
FOR PLAN = 1 RATIO= .00									
7-7Ar	MANE	2.65	149.14	217.31	2.28	5.00	147.01	215.00	2.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9831E+01 EXCESS= .0000E+00 OUTFLOW= .9833E+01 BASIN STORAGE= .6206E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
7-7Ar	MANE	2.66	146.23	215.51	2.24	5.00	144.62	215.00	2.24

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9670E+01 EXCESS= .0000E+00 OUTFLOW= .9672E+01 BASIN STORAGE= .4999E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
7-7Ar	MANE	2.67	144.81	216.08	2.21	5.00	142.21	215.00	2.21

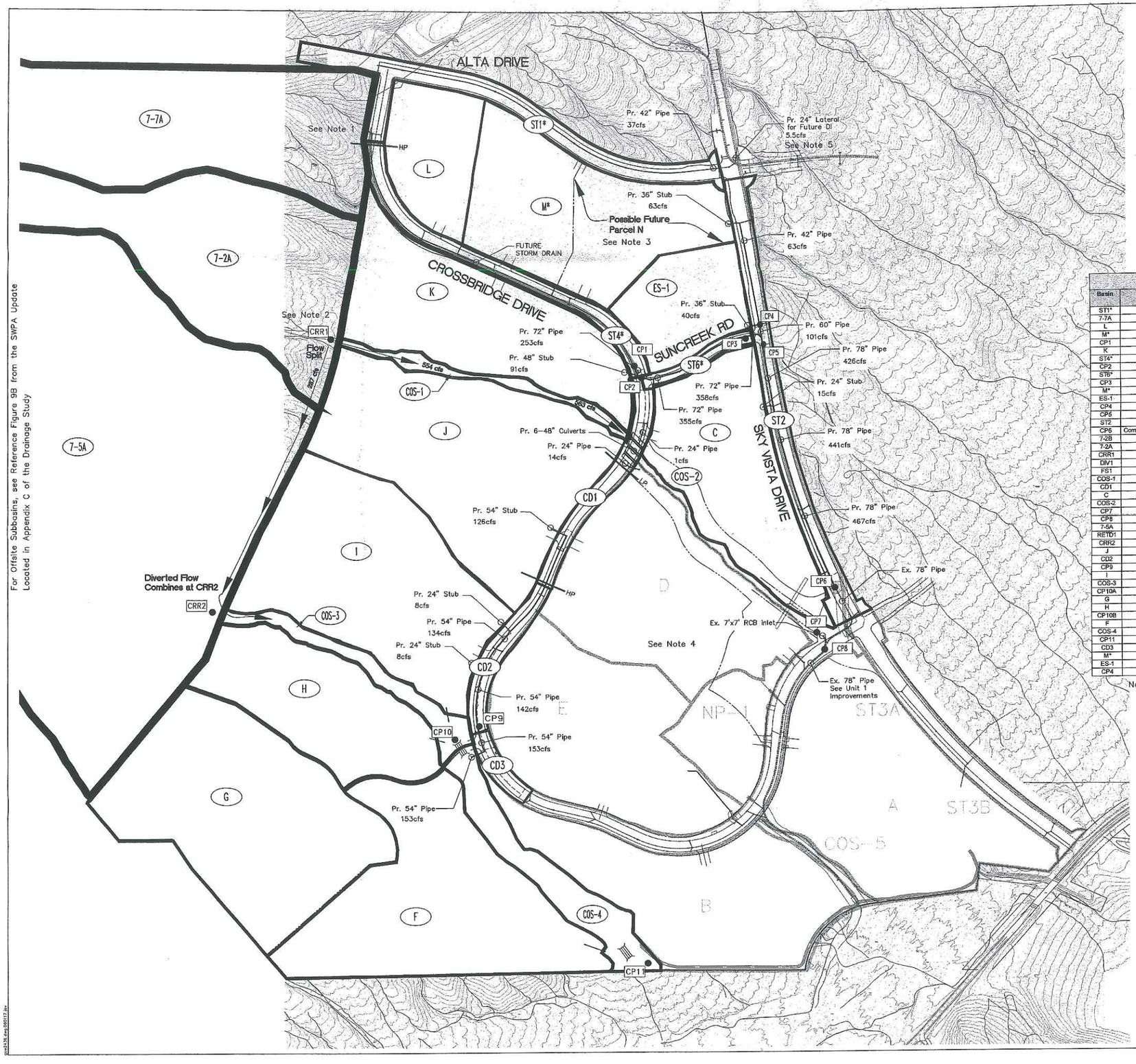
CONTINUITY SUMMARY (AC-FT) - INFLOW= .9551E+01 EXCESS= .0000E+00 OUTFLOW= .9553E+01 BASIN STORAGE= .6144E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
7-7Ar	MANE	2.67	144.14	216.37	2.20	5.00	141.32	215.00	2.19

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9493E+01 EXCESS= .0000E+00 OUTFLOW= .9495E+01 BASIN STORAGE= .5767E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

For Offsite Subbasins, see Reference Figure 9B from the SWPA Update
Located in Appendix C of the Drainage Study



LEGEND

- SUBBASIN BOUNDARY
- 7-7A — DRAINAGE SUBBASIN
- CP6 — CONCENTRATION POINT
- FLOW DIRECTION

SUMMARY OF HEC-1 MODEL ULTIMATE CONDITION

Basin	Remarks	Area (ac)	Q_{100} (cfs)	Q_{10} (cfs)
ST1*	Alta Drive	10.5	37	19
7-7A	Offsite area west of Village 24; drains to Crossbridge	51.8	153	70
L	Parcel L east of Crossbridge	15.0	50	24
M*	2/3 of Parcel M: maximum allowable flow to Crossbridge storm drain	20.2	63	31
CP1	Combine flows in storm drain in Crossbridge: 7-7A+L+M*	—	253	119
K	Parcel K west of Crossbridge	29.7	91	44
ST4*	Crossbridge from HP south of Alta to Suncreek	6.5	24	12
CP2	Combine flows in storm drain in Crossbridge: ST4*+K+CP1	—	355	169
ST6*	Suncreek Road	1.8	7	4
CP3	Combine flows in storm drain in Suncreek upstream of Sky Vista: ST6*+CP2	—	358	170
M*	1/3 of Parcel M	10.1	32	16
ES-1	Parcel ES-1 west of Sky Vista	12.1	40	19
CP4	Combine flows in Sky Vista storm drain upstream of Suncreek: ES-1+M*	—	69	34
CP5	Combine flows in Sky Vista storm drain at intersection with Suncreek: CP4+CP3	—	426	204
ST2	Sky Vista between Alta and Crossbridge	10.0	33	17
CP6	Combine flows in Sky Vista storm drain at downstream end of proposed improvements: CP5+ST2	—	452	218
7-2B	Offsite area west of Summerlin boundary	60.4	182	82
7-2A	Offsite area west of Village 24	288.8	687	315
CRR1	Combine flows at Village 24 boundary at northerly existing wash: 7-2B+7-2A	—	841	386
DIV1	Divert flows at boundary	—	287	132
FS1	Flow continuing in existing wash through Village 24 (CRR1r)	—	554	255
COS-1	Open space parcel COS-1: existing wash	3.1	9	4
CD1	Portion of Crossbridge that drains to LP over bridge	4.4	17	9
C	Parcel C south of Suncreek and west of Sky Vista	25.8	74	34
COS-2	Open space parcel COS-2: existing wash south of Crossbridge	2.2	6	3
CP7	Combine flows at open inlet at Crossbridge: FS1(CRR1r)+COS-1+CD1+COS-2+C	—	601	280
CP8	Combine flows at storm drain in Crossbridge: CP7+CP6	—	980	468
7-5A	Offsite area west of Village 24	190.1	506	225
RETD1	Diverted flow from CRR1	—	287	132
CRR2	Combine flows at Village 24 boundary	—	720	313
J	Parcel J west of Crossbridge	43.0	126	60
CD2	Portion of Crossbridge	3.3	11	6
CP9	Combine flows in Crossbridge storm drain: J+CD2	—	136	66
I	Parcel I west of Crossbridge	40.5	123	59
COS-3	Parcel COS-3: open space area	5.2	16	7
CP10A	Combine flows in existing wash southwest of Crossbridge: CP12+I+COS-3	—	268	130
G	Parcel G west of existing wash	42.7	108	45
H	Parcel H west of existing wash	22.1	59	25
CP10B	Combine flows in existing wash southwest of Crossbridge: CP10A+G+H	—	431	200
F	Parcel F west of existing wash	38.0	99	41
COS-4	Parcel COS-4: open space area (existing wash)	9.3	29	12
CP11	Combine flows at south boundary of Village 24: CP10B+F+COS-4+CRR2	—	1170	519
CD3	Portion of Crossbridge Drive draining to Unit 1 improvements	1.6	7	3
M*	2/3 of Parcel M: maximum allowable flow to Sky Vista storm drain	20.2	63	31
ES-1	Parcel ES-1 west of Sky Vista	12.1	40	19
CP4	Repeat combine flows in Sky Vista north of Suncreek: ES-1+M*	—	101	50

Note: 2/3 of runoff from Parcel M* may drain to either the Crossbridge or Sky Vista storm drains.

Notes:

1. In the future, Subbasin 7-7A will be graded to drain to the Crossbridge Drive storm drain; no flow will go into the Alta Drive storm drain.
2. In the future, runoff to this point may be diverted to the southerly wash. At the present time, it is unknown how development west of Village 24 will discharge storm flows.
3. Parcel M from the Conceptual Drainage Study may be subdivided into two parcels called M and N. The total flow from the two parcels will not exceed 95 cfs (per the CDS). Parcels M and N may discharge a maximum of 63 cfs to either the Crossbridge or the Sky Vista storm drains. On this drawing, 63 cfs is shown in both storm drains.
4. Parcels D, E, NP-1, ST3, A, B, COS-5 and Crossbridge Drive between Subbasin CD3 and Sky Vista Drive affect Unit 1 improvements only and are not included in the hydrologic model for Unit 2. Boundary lines for Parcels C, COS-2, D, E and NP-1 may be revised in the future.
5. Flow to lateral is 1/2 of flow from subbasin COLL in the Alta Drive RCB study.

See the drainage study for description of storm drain flows.

DATE:
DESCRIPTION
DATE | AGEN. | APP | DATE | DGN. | APP.
REV. | DATE
DESIGN:
DRAWN:
CHECK:
ISSUE DATE:
ISSUE EDITION:
PLOT DATE: 04-24-07
PLOT TIME: 15:49:09

G.C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
555 S. RAINBOW BOULEVARD · LAS VEGAS, NV 89146
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SUMMERLIN VILLAGE 24
UNIT 2 IMPROVEMENTS
FIGURE 5R
ULTIMATE CONDITION DRAINAGE MAP

DRAWING
FIG5R
1 OF 1 SHTS


EXISTING DETENTION BASIN NO. 5
Boundary of Zone A
RG6A
RG6B
RG6*
RG6D
RG6E
RG6C
7-2A*
CBRG
CRR1
OFF6
OFF7
OFF8
OFF10
OFF9
OFF11
ON1
ON7R
ON8R
ON10R
ON7R2
CP12
CD1
CP1
CP10
CD2
CP2
CD3
CP11
CP6
CP7
CP8
CP5
ST6*
RG6F
CP9
CPRCB
LP
HP
ALTA DRIVE ROUGH GRADE
CROSSBRIDGE DRIVE ROUGH GRADE
SUNCREEK RD
SKY VISTA DRIVE
VILLAGE 24 BOUNDARY
VILLAGE 24 BOUNDARY
Pr. Temp. Ponding 300cfs Inflow
Pr. Open Cut Pipe 155cfs Outflow
Temporary Sediment Berm
Ex. Berm
Pr. 24" Outlet Pipe 155cfs
Pr. 60" Pipe
Pr. 42" Pipe
Pr. 24" Pipe
Pr. 18" Pipe
Pr. 30" Pipe
Pr. 36" Pipe
Pr. 48" Pipe
Pr. 54" Pipe
Pr. 60" Pipe
Pr. 72" Pipe
Pr. Curb Inlet
Pr. Grate Inlet
Pr. Double Grate Inlet
Pr. Manhole
Pr. Headwall
Pr. Flared End Section
Pr. Concrete Channel
Pr. Rock Channel
Pr. Rock Lined Swale
Pr. Rock Lined Ditch
Pr. Rock Lined Chute
Pr. Rock Lined Apron
Pr. Rock Lined Basin
Pr. Rock Lined Energy Dissipator
Pr. Rock Lined Outlet
Pr. Rock Lined Inlet
Pr. Rock Lined Transition
Pr. Rock Lined Curve
Pr. Rock Lined Tangent
Pr. Rock Lined Straight
Pr. Rock Lined Reverse Curve
Pr. Rock Lined Compound Curve
Pr. Rock Lined Spiral Curve
Pr. Rock Lined Vertical Curve
Pr. Rock Lined Horizontal Curve
Pr. Rock Lined Superelevation
Pr. Rock Lined Transition Curve
Pr. Rock Lined Tangent Curve

SUMMERLIN SM

VILLAGE 24 UNIT 2 IMPROVEMENTS

CROSSBRIDGE DRIVE, SUNCREEK ROAD, SKY VISTA DRIVE
INCLUDING VILLAGE 24 WATERLINE IMPROVEMENT GRADING

SID # 811 PROJECTS 2A, 2B, 3A, 3B, 4A, 4B, 8A, 8B, 22A, 22B, 22C AND A PORTION OF 5A, 6A, 7A, 20A

2014

A.P.N. 137-22-000-015

DEVELOPER

The Howard Hughes Corporation SM
an affiliate of General Growth Properties, Inc.

HOWARD HUGHES COMPANY, LLC
A NEVADA CORPORATION
10801 W. CHARLESTON BLVD., 3RD FLOOR
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DRAINAGE FACILITIES NOTE:

ALL TEMPORARY DRAINAGE FACILITIES (SUCH AS BUT NOT LIMITED TO BERMS/CHANNELS) ARE OWNED AND TO BE PRIVATELY MAINTAINED BY HOWARD HUGHES CORPORATION.

THE HOWARD HUGHES CORPORATION

a Delaware corporation

By: _____ DATE
KEVIN ORROCK

Title: EXECUTIVE VICE PRESIDENT, SUMMERLIN DEVELOPMENT

"APPROVAL OF THESE PLANS IS LIMITED TO THOSE IMPROVEMENTS CONSTRUCTED IN THE DEDICATED RIGHTS-OF-WAY AND/OR DEDICATED EASEMENTS. THIS APPROVAL DOES NOT AUTHORIZE THE CONSTRUCTION OF ANY IMPROVEMENTS THAT DEVIATE FROM ADOPTED STANDARDS AND/OR SPECIFICATIONS, EXCEPT THOSE SPECIFICALLY LISTED UNDER DEVIATIONS FROM STANDARD. THE ENGINEER SHALL RESOLVE ANY DEVIATION OTHER THAN THOSE LISTED IN DEVIATIONS FROM STANDARDS IN FAVOR OF THE UNIFORM STANDARD DRAWINGS AND SPECIFICATIONS CLARK COUNTY AREA NEVADA".

JORGE CERVANTES, PE #13977, PTOE — DATE
CITY ENGINEER
CITY OF LAS VEGAS, NEVADA

CLV PLANNING DEPARTMENT

THIS PLAN MEETS THE APPLICABLE STANDARDS OF THE PLANNING AND DEVELOPMENT DEPARTMENT

DOUG RANKIN, AICP, CURRENT PLANNING MANAGER — DATE

DRAINAGE CERTIFICATION

I CERTIFY THAT THE GRADING PLANS ARE IN CONFORMANCE WITH THE APPROVED DRAINAGE STUDY ON FILE AT THE CITY OF LAS VEGAS FOR THIS PROJECT (DS #4136A)

Vicki D. Marjerrison — 5-14-14
VICKI D. MARJERRISON P.E. 13079 — DATE

NEVADA POWER COMPANY DISCLAIMER

NEVADA POWER COMPANY ACKNOWLEDGES THAT WE HAVE RECEIVED YOUR PLANS AND WILL PROVIDE SERVICE TO ALL ELECTRICAL NEEDS ASSOCIATED WITH THIS PROJECT. NEVADA POWER COMPANY RESERVES THE RIGHT TO ADDRESS ANY EXISTING OR FUTURE CONFLICTS ONCE THE FINAL DESIGN IS COMPLETED. THE NEW SERVICE AND THE RESOLUTION OF ANY CONFLICTS WILL BE ACCOMPLISHED PURSUANT TO THE NEVADA PUBLIC UTILITY COMMISSION'S RULES AND REGULATIONS.

CALL BEFORE YOU DIG: 1(800)227-2600

NEVADA POWER Co. _____ REVIEWED BY _____ DATE

APPROVED BY:

LAS VEGAS VALLEY WATER DISTRICT — DATE
(SHEETS C1, C2, C3, MU1, MU2, U1 TO U17, D4 TO D8, G8, G9) PROJECT # 114100

THE CENTRAL TELEPHONE CO. APPROVAL DOES NOT ASSUME OR GUARANTEE LIABILITY FOR KNOWN OR UNKNOWN CONFLICTS WITH EXISTING OR PROPOSED IMPROVEMENTS. RESOLUTION OF ANY CONFLICT WILL BE ACCOMPLISHED PURSUANT TO LOCAL ORDINANCES, NEVADA REVISED STATUTES AND/OR PUBLIC UTILITY COMMISSION RULES AND REGULATIONS.

CENTRAL TELEPHONE CO. — DATE

SOUTHWEST GAS CORPORATION — DATE

COX COMMUNICATIONS, LAS VEGAS INC. — DATE

SHEET 1 OF 82

CLV DRAWING NO. XXXXX

STATE OF NEVADA — PROFESSIONAL ENGINEER — VICKI D. MARJERRISON — No. 13079 — CIVIL — DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 14:41:00

G. C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
1555 S. RAINBOW BOULEVARD · LAS VEGAS, NV 89146
T: 702.804.2000 · F: 702.804.2299 · GCWALLACE.COM
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SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
COVER SHEET

DRAWING C1
1 OF 82 SHTS

emor jenson
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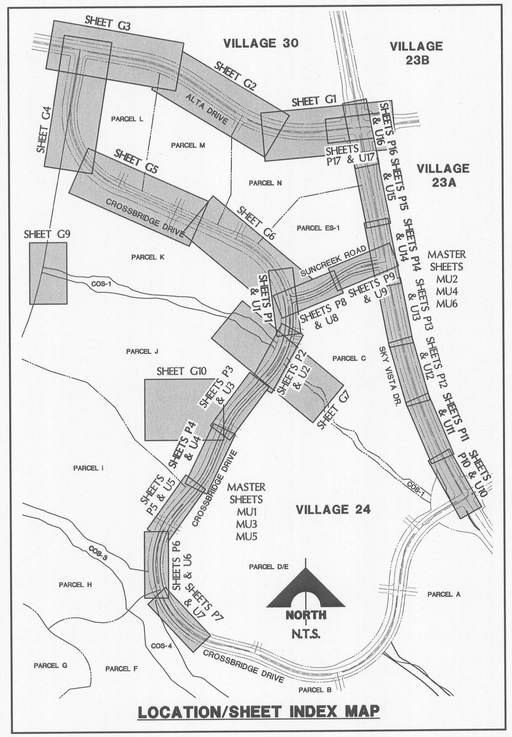


LOCATION/SHEET INDEX MAP

LEGEND AND ABBREVIATION

- (1) DETAIL DRAWING NUMBER
- (1/-) DETAIL DRAWING NUMBER DRAWN ON SAME SHEET
- (1/7) DETAIL DRAWING NUMBER WITH REFERENCE TO THE SHEET IT IS DRAWN ON
- (1/SIS) STANDARD DRAWING NUMBER (S) PER SUMMERLIN IMPROVEMENT STANDARDS, OR PER OTHER STANDARDS AS NOTED IN ABBREVIATION TABLE
- (1/I) INDICATES CONSTRUCTION NOTE
- (A/I) INDICATES REMOVAL NOTE
- (1) INDICATES CURVE NUMBER
- INDICATES SEWER MANHOLE IN PROFILE
- INDICATES STORM DRAIN MANHOLE IN PROFILE
- (60.50) TC EXISTING SPOT ELEVATION
- 60.50 TC PROPOSED SPOT ELEVATION
- [60.50] TC FUTURE SPOT ELEVATION
- STUB & CAP PIPE
- POLE
- EXISTING PIPE
- PROPOSED PIPE
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- ELASTOMERIC SEALANT
- SIGHT VISIBILITY EASEMENT (SVE)

EMBANKMENT

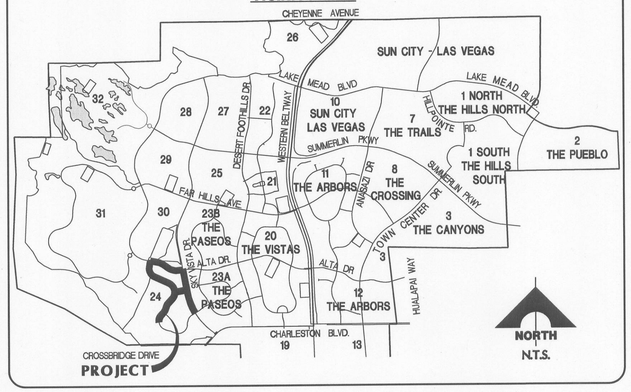
- TOP / BOTTOM — PROPOSED
- BY SEPARATE CONTRACT
- EXISTING

ABBREVIATION

I	=	IMPROVEMENTS
W	=	WATER
S	=	SEWER
SIS	=	SUMMERLIN IMPROVEMENT STANDARDS
INV	=	INVERT
IRR.	=	IRRIGATION SLEEVES
DIP	=	DUCTILE IRON PIPE
FUT	=	FUTURE
SD	=	STORM DRAIN
SL	=	STREET LIGHTING
SIG	=	TRAFFIC SIGNAL
SMH	=	SEWER MANHOLE
SDMH	=	STORM DRAIN MANHOLE
CC	=	CLARK COUNTY
CLV	=	CITY OF LAS VEGAS
LVVWD	=	LAS VEGAS VALLEY WATER DISTRICT
NDOT	=	NEVADA DEPT. OF TRANSPORTATION STANDARD PLANS, JANUARY 1999
TR	=	STREET LIGHT TRENCH (SEE ELECTRICAL PLANS)
DG	=	DESIGN GRADE
TC	=	TOP OF CURB
FG	=	FINISHED GRADE
LF	=	LINEAL FOOT
MOC	=	MIDDLE OF CURVE
UDS	=	UNIFORM STANDARD DRAWINGS– CLARK COUNTY AREA (LATEST EDITION)
DCSWCS	=	DESIGN AND CONSTRUCTION STANDARDS FOR WASTEWATER COLLECTION SYSTEMS
UDACS	=	UNIFORM DESIGN AND CONSTRUCTION STANDARDS FOR WATER DISTRIBUTION SYSTEMS

NOTE: LEGEND & ABBREVIATIONS IN THE "SUMMERLIN IMPROVEMENT STANDARDS", LATEST EDITION, WILL BE UTILIZED FOR ANY LEGEND & ABBREVIATION REQUIRED WHICH ARE NOT SHOWN.

VICINITY MAP



CONSTRUCTION NOTES

SEWER

- (1/S) INSTALL 48" DIA. SEWER MANHOLE — SD 1-8 / DCSWCS
- (2/S) INSTALL TEMPORARY PLUG AND CAP
- (3/S) REMOVE PLUG & CONNECT TO EXISTING SEWER LINE (CONTRACTOR TO VERIFY SIZE, INVERT, AND LOCATION OF EXISTING SEWER LINE PRIOR TO CONSTRUCTION)

IRRIGATION

- (1/IR) BANK "A"; 1–6" & 2–4" SCHD 40 PVC — U-18 SIS / 1 D3
- (2/IR) BANK "B"; 2–4" SCHD 40 PVC — U-18 SIS / 2 D3

CONSTRUCTION NOTES

IMPROVEMENTS

- (1/I) INSTALL "A" TYPE ISLAND CURB — S-50 SIS
- (2/I) INSTALL 6" "L" TYPE CURB & GUTTER — S-47 SIS
- (3/I) INSTALL A.C. PAVEMENT PER TYPICAL STREET SECTION DETAILS
- (4/I) INSTALL HANDICAP RAMP CURB DEPRESSION (BY OTHERS) — S-79 SIS
- (5/I) VERIFY LOCATION AND ELEVATION OF EXISTING IMPROVEMENT & ADJUST FACILITY TO GRADE. IF DISCREPANCY EXISTS, NOTIFY ENGINEER PRIOR TO CONSTRUCTION
- (6/I) SAWCUT AND REPLACE EXISTING A.C. PAVEMENT
- (7/I) INSTALL CONCRETE ENCASEMENT — 6 D3
- (8/I) EXISTING RIPRAP TO BE REMOVED AND STOCKPILED
- (9/I) INSTALL "L" TYPE ISLAND CURB — S-50 SIS

WATER

- (1/W) INSTALL 24" DIA. GATE VALVE & VALVE BOX — 8 UDACS / 2 D8
- (2/W) INSTALL 16" DIA. GATE VALVE & VALVE BOX — 8 UDACS
- (3/W) INSTALL 12" DIA. GATE VALVE & VALVE BOX — 30 UDACS / 39 UDACS
- (4/W) INSTALL STANDARD FIRE HYDRANT ASSEMBLY — 40 UDACS / 3 D8
- (5/W) INSTALL CAP AND 2" MANUAL BLOW–OFF ASSEMBLY — 36 UDACS
- (6/W) INSTALL 12"x12" TEE — 31 UDACS
- (7/W) INSTALL 24"x24" TEE — 5 UDACS
- (8/W) INSTALL 12"x16" TEE — 5 UDACS
- (9/W) INSTALL 24"x8" TEE — 5 UDACS
- (10/W) INSTALL 8" DIA. GATE VALVE & VALVE BOX — 30 UDACS / 39 UDACS
- (11/W) INSTALL 11–1/4° BEND — 31 UDACS
- (12/W) INSTALL 22–1/2° BEND — 31 UDACS
- (13/W) INSTALL 45° BEND — 31 UDACS
- (14/W) INSTALL 90° BEND — 31 UDACS
- (15/W) 16"x12" REDUCER — 3 UDACS
- (16/W) 24"x16" REDUCER — 3 UDACS
- (17/W) 24"x12" REDUCER — 3 UDACS
- (18/W) INSTALL 8"x6" TEE — 31 UDACS
- (19/W) INSTALL 16"x6" TEE — 5 UDACS / 31 UDACS
- (20/W) INSTALL 12"x6" TEE — 31 UDACS
- (21/W) VERIFY LOCATION & ELEVATION OF EXISTING WATERLINE APPURTENANCES, AND ADJUST FACILITY TO GRADE. IF DISCREPANCY EXISTS, NOTIFY ENGINEER PRIOR TO CONSTRUCTION
- (22/W) REMOVE CAP AND BLOW–OFF PER UDACS PLATE NO. 36 NOTE NO. 1 AND CONNECT TO EXISTING WATER LINE (CONTRACTOR TO VERIFY SIZE AND LOCATION OF EXISTING WATER LINE). IF DISCREPANCY EXISTS, NOTIFY ENGINEER PRIOR TO CONSTRUCTION.
- (23/W) INSTALL 1 1/2" TYPE K COPPER W/SERVICE SADDLE, 1 1/2" METER & 1 1/2 RPPA PER UDACS PLATE NO. 3 & 8.
- (24/W) INSTALL 6" MANUAL BLOW OFF ASSEMBLY — 37 UDACS
- (25/W) 12"x10" TAPPING SLEEVE & 10" TAPPING VALVE (CONTRACTOR TO VERIFY SIZE, INVERT, & LOCATION OF EXISTING WATER LINE). IF DISCREPANCY EXISTS, NOTIFY ENGINEER PRIOR TO CONSTRUCTION. — 34 UDACS
- (26/W) INSTALL 12"x10" REDUCER — 30 UDACS
- (27/W) INSTALL 10"x6" TEE — 31 UDACS
- (28/W) INSTALL 10" GATE VALVE & VALVE BOX — 30 UDACS / 39 UDACS
- (29/W) INSTALL 4" COMBINATION AIR VALVE — 38 UDACS

STORM DRAIN

- (1/SD) INSTALL TYPE I 60" STORM DRAIN MANHOLE — 403 USD
- (2/SD) INSTALL TYPE II STORM DRAIN MANHOLE — 405 USD
- (3/SD) INSTALL TYPE III STORM DRAIN MANHOLE — 406 USD
- (4/SD) INSTALL PRECAST MANHOLE TEE — 407 USD
- (5/SD) INSTALL PRECAST ELBOW (SEE PLAN FOR ANGLE)
- (6/SD) INSTALL PIPE JUNCTION — 7 D3
- (7/SD) INSTALL CLV TYPE "CM" DROP INLET, SEE PLAN FOR LENGTH — 4 D3 *
- (8/SD) INSTALL TEMPORARY PLUG
- (9/SD) INSTALL CONCRETE COLLAR — 5 D3
- (10/SD) CONNECT TO EXISTING STORM DRAIN LINE (CONTRACTOR TO VERIFY SIZE, INVERT, AND LOCATION OF EXISTING STORM DRAIN LINE)
- (11/SD) CONSTRUCT STORM DRAIN WITH WATER TIGHT JOINTS USING AN ELASTOMERIC JOINT SEALANT APPROVED BY LVVWD. COMPACT PER USD OR UDACS STANDARDS (MOST STRINGENT) TO INSURE AGAINST DIFFERENTIAL SETTLEMENT OF THE STORM DRAIN.
- (12/SD) PROTECT WATERLINES IN PLACE. WHEREVER A WATERLINE IS ABOVE A STORM DRAIN OR SEWER WHERE COMPACTION REQUIREMENTS UNDER A WATERLINE CANNOT BE MET, BACKFILL TRENCH WITH CLASS I/ CLASS II CONTROLLED LOW STRENGTH MATERIAL (CLSM) TO THE SPRING LINE OF THE WATERLINE. THIS REQUIREMENT IS FOR STRUCTURAL SUPPORT ONLY. ADDITIONAL HEALTH REGULATIONS MAY APPLY PER UDACS 2.19.
- (13/SD) CULVERT HEADWALL
- (14/SD) PRECAST ARCH
- (15/SD) REMOVE PLUG & INSTALL DROP INLET (CONTRACTOR TO VERIFY SIZE AND LOCATION OF EX. STORM DRAIN LINE PRIOR TO CONSTRUCTION)

* NOTE: INSTALL MANHOLE STEPS PER USD 402 NOTE 9 AND USD 410. DROP INLET FRAME AND COVER SHALL ALIGN WITH MANHOLE STEPS.

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41	U12	SKY VISTA DRIVE UTILITY PLAN AND PROFILE 3
42	U13	SKY VISTA DRIVE UTILITY PLAN AND PROFILE 4
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BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

LOCATION

LYING WITHIN SECTIONS 34 TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA.

DEVIATIONS FROM STANDARDS

1. ADD RAISED MEDIAN TO NEIGHBORHOOD COLLECTOR LEVEL 2 (PER S.I.S. DWG NO S–6) TO ENHANCE MARKETING AND SALES ENTRIES INTO VILLAGE 24. RIGHT–OF–WAY (BC–BC) EXPANDS TO 67.34 FEET TO 84.00 FEET (AS MEDIAN ISLAND VARIES), IN LIEU OF 54.00 FEET. TRAVEL LANES REMAIN UNCHANGED.
2. REDUCE LANDSCAPE MEDIAN ISLAND IN FUTURE "GATED" PARCEL ENTRIES (PER S.I.S. DWG NO S–12A) FROM 15.00 FEET TO 13.34 FEET, IN EXCHANGE FOR WIDER COMMON AREAS WHICH ARE PROPOSED 20 FEET WIDE IN LIEU OF 15 FEET. THIS ADDITIONAL AREA WILL BE UTILIZED FOR GRADING AND SLOPE ADJUSTMENTS. CORRESPONDINGLY, THE RIGHT–OF–WAY IS REDUCED FROM 64.00 FEET TO 61.34 FEET. TRAVEL LANES REMAIN UNCHANGED.
3. STREET LIGHTS, AT ALL FUTURE PARCEL ENTRIES, WILL BE SET AT 10 FEET OUTSIDE OF BCR AND 2.5 FEET OF BC (IN LIEU OF LOCATIONS SET PER S.I.S. E–16 FOR MEANDERING SIDEWALK). THIS WILL ALLOW ADJUSTMENTS TO PARCEL ENTRIES WITHOUT AFFECTING STREET LIGHT LOCATIONS.

NOTES TO CONTRACTOR:

1. ALL EXISTING UTILITY CROSSINGS MUST BE VERIFIED PRIOR TO CONSTRUCTION OF ANY MAIN LINES OR LATERALS THAT MAY BE ADVERSELY AFFECTED. ANY DISCREPANCIES IN LOCATION AND/OR ELEVATION MUST BE PROVIDED TO THE ENGINEER FOR ACCEPTANCE PRIOR TO CONSTRUCTION.
2. ALL COMMON LOTS AS SHOWN HEREIN TO BE PRIVATELY MAINTAINED BY THE SUMMERLIN H.O.A. A FUTURE MEANDERING SIDEWALK WILL BE INSTALLED BY SUMMERLIN AS REQUIRED TO SERVICE THE DEVELOPMENT OF EACH PARCEL.
3. ALL WATER LINE GATE VALVES, SERVICE GATE VALVES, AND FIRE HYDRANT GATE VALVES ARE TO BE CONSTRUCTED UNDER A.C. PAVEMENT. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY THAT ALL WATER VALVE CANS DO NOT CREATE CONFLICTS WITH THE PROPOSED CURB LINE PRIOR TO PLACEMENT OF CONCRETE. ALL WATER FACILITIES SHOWN IN THESE DRAWINGS HAVE BEEN "SCALED–UP" FOR CLARITY ONLY.

SUMMERLIN STREET CLASSIFICATION

CROSSBRIDGE DRIVE:	NEIGHBORHOOD COLLECTOR LEVEL 1 AND LEVEL 2 WITH SHARED BIKE LANES
SKY VISTA DRIVE:	NEIGHBORHOOD ARTERIAL WITH BIKE LANES
SUNCREEK ROAD:	NEIGHBORHOOD COLLECTOR LEVEL 1 WITH SHARED BIKE LANES
ALTA DRIVE:	NEIGHBORHOOD ARTERIAL WITH BIKE LANES

STREET QUANTITIES (PUBLIC)

STREETS		
4" A.C. PAVEMENT	22,488	S.Y.
4.5" A.C. PAVEMENT	21,566	S.Y.
5.5" A.C. PAVEMENT	2,358	S.Y.
4" TYPE II AGGREGATE	3,012	C.Y.
4.5" TYPE II AGGREGATE	3,257	C.Y.
5.5" TYPE II AGGREGATE	386	C.Y.
8" TYPE "A" ISLAND CURB	9,090	L.F.
6" TYPE "L" ISLAND CURB	357	L.F.
6" TYPE "L" CURB & GUTTER	14,319	L.F.
EXCAVATION	268,000	C.Y.
EMBANKMENT	239,000	C.Y.
ADJUST EXISTING FACILITIES TO GRADE	30	EA.
STREET LIGHTS		
SINGLE ARM ST. LT.	32	EA.
DOUBLE ARM ST. LT.	26	EA.
CONDUIT	15,066	L.F.
IRRIGATION		
IRRIGATION SLEEVES – BANK "A"	641	L.F.
IRRIGATION SLEEVES – BANK "B"	331	L.F.

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AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY. CALL BEFORE YOU DIG OVERHEAD 1-702-227-2929

APPROVAL:

LAS VEGAS VALLEY WATER DISTRICT (PROJECT # 114100) — DATE

ENGINEER – STATE OF NEVADA — VICKI D. MARLENEE — No. 13017 — PROFESSIONAL ENGINEER — DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GOW APP

PROJECT NO. 62A.24.212

DESIGN: DRAWN: CHECK:

PLOT DATE: 05–14–14

PLOT TIME: 13:41:15

G.C. WALLACE COMPANIES
ENGINEERS | SURVEYORS
1555 S. RAINBOW BOULEVARD - LAS VEGAS, NV 89146
T: 702.804.2000 - F: 702.804.2299 - GCWALLACE.COM
LAS VEGAS - SACRAMENTO - RENO

SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

PROJECT DATA SHEET I

DRAWING C2 — 2 OF 82 SHTS

CLV DRAWING NO. XXXXX

emorjenson

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LAS VEGAS FIRE AND RESCUE GENERAL NOTES

1. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE THE CITY OF LAS VEGAS FIRE DEPARTMENT'S ORDINANCE #5667, "HYDRANT SPECIFICATIONS", AND "HYDRANT INSTALLATION SPECIFICATION".
2. AUTHORIZED FIRE HYDRANTS ARE AS FOLLOWS:
   A. KENNEDY – GUARDIAN MODELS K81A AND K81D
   B. MUELLER – SUPER CENTURION 250 MODEL A-423
   C. CLOW – MEDALLION MODEL F-2546LVD
   D. U.S. PIPE – METROFLOW/M-03
3. ON ANY RESIDENTIAL OR COMMERCIAL INSTALLATIONS FIRE HYDRANTS SHALL BE INSTALLED AND FIRE APPARATUS ACCESS ROADS SHALL BE MAINTAINED BEFORE COMMENCEMENT OF ANY COMBUSTIBLE CONSTRUCTION. ALL FIRE HYDRANTS SHALL BE IN GOOD WORKING ORDER AND SHALL BE CAPABLE OF DELIVERING THE REQUIRED FIRE FLOW.
4. TO IDENTIFY THE FIRE HYDRANT LOCATIONS, THE CONTRACTOR SHALL PLACE A BLUE REFLECTIVE MARKER AT THE CENTER LINE OF STREET ADJACENT TO THE FIRE HYDRANTS AS REQUIRED BY ORDINANCE # 5667.
5. ALL UNDERGROUND INSPECTIONS, PRESSURE AND FLUSH VERIFICATIONS OF ALL FIRE HYDRANTS AND FIRE LINES, SHALL BE CONDUCTED BEFORE COVERING THE LINES. CALL THE CITY OF LAS VEGAS INSPECTION HOT-LINE AT 229-2071 TO REQUEST AN INSPECTION BY THE CITY OF LAS VEGAS FIRE DEPARTMENT.
6. PAINTING OF THE CURBS AND FIRE HYDRANTS AND OTHER WORK NECESSARY AS REQUIRED BY ORDINANCE # 5667, FOR THE PROTECTION OF FIRE HYDRANTS FROM PHYSICAL DAMAGE, SHALL BE COMPLETED BEFORE APPROVAL BY THE CITY OF LAS VEGAS FIRE DEPARTMENT.
7. A PERMIT IS REQUIRED FROM THE CITY OF LAS VEGAS FIRE DEPARTMENT FOR THE ON-SITE WATER LINES AND FIRE HYDRANTS. THE PERMIT AND CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING FORM SHALL BE OBTAINED FROM THE FIRE PROTECTION ENGINEER BEFORE COMMENCEMENT OF WORK.
8. PRIVATE FIRE HYDRANTS SHALL BE PAINTED RED.
9. PRIOR TO THE FINAL OCCUPANCY, A FLOW TEST MUST BE WITNESSED BY THE CITY OF LAS VEGAS FIRE DEPARTMENT TO VERIFY AVAILABILITY OF THE REQUIRED FIRE FLOW.
10. ALL ON-SITE UNDERGROUND WATER MAINS AND MATERIALS SHALL BE U.L. LISTED, A.W.W.A. APPROVED, AND SHALL BE RATED FOR THE APPROPRIATE WORKING PRESSURE.
11. FIRE HYDRANTS SPACING SHALL BE:
    RESIDENTIAL – 500 FT UNSPRINKLERED; 600 FT SPRINKLERED.
    COMMERCIAL – 300 FT UNSPRINKLERED; 400 FT SPRINKLERED.
12. WHERE NEW WATER MAINS ARE EXTENDED ALONG STREETS OR NEW STREETS ARE INSTALLED WHERE FIRE HYDRANTS ARE NOT NEEDED FOR PROTECTION OF THE STRUCTURES, FIRE HYDRANTS SHALL BE INSTALLED AT A MAXIMUM 1,000 FOOT SPACING, TO PROVIDE FOR TRANSPORTATION HAZARDS. WHERE STREETS ARE PROVIDED WITH MEDIAN DIVIDERS OR HAVE FOUR OR MORE TRAFFIC LANES AND HAVE A TRAFFIC COUNT OF MORE THAN 30,000 PER DAY, HYDRANTS ARE REQUIRED ON EACH SIDE OF THE STREET SPACED AT 500 FEET ON AN ALTERNATING BASIS.
13. NO FIRE HYDRANTS SHALL BE LOCATED WITHIN THE REQUIRED RADIUS OF A CUL-DE-SAC OR WITHIN 20 FEET OF THE PERIMETER OF THE RADIUS OF THE CUL-DE-SAC.
14. NO FIRE HYDRANTS SHALL BE LOCATED WITHIN 6 FEET OF ANY CURB RETURN, DRIVEWAY, POWER POLE, STREETLIGHT OR ANY OTHER OBSTRUCTION.
15. THE MAXIMUM DISTANCE FROM A FIRE HYDRANT TO A ONE-TWO FAMILY DWELLING SHALL NOT EXCEED 300 FT, AS MEASURED BY AN APPROVED ROUTE.
16. THE MAXIMUM DISTANCE FROM A FIRE HYDRANT TO A FIRE DEPARTMENT CONNECTION (FDC) SHALL NOT EXCEED 100 FT, AS MEASURED BY AN APPROVED ROUTE.
17. THE MAXIMUM DISTANCE FROM A FIRE HYDRANT TO THE END OF A DEAD-END STREET SHALL NOT EXCEED 200 FT.
18. TWO SOURCES OF SUPPLY ARE REQUIRED WHENEVER THERE ARE 4 OR MORE FIRE HYDRANTS/SPRINKLER LEAD-INS INSTALLED ON A SINGLE SYSTEM. SECTIONAL CONTROL VALVES SHALL BE INSTALLED SO THAT NO MORE THAN 2 FIRE HYDRANTS CAN BE OUT OF SERVICE DUE TO A BREAK IN A WATER MAIN.
19. ALL FIRE APPARATUS ACCESS ROADS SHALL BE PAVED TO PROVIDE ALL-WEATHER DRIVING CAPABILITIES, AND SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF THE FIRE APPARATUS.
20. THE GRADIENT FOR THE FIRE APPARATUS ACCESS ROADS SHALL NOT EXCEED 12%. ANGLES OF APPROACH AND ANGLES OF DEPARTURE SHALL NOT EXCEED 6% FOR 25 FEET PRIOR TO OR AFTER THE GRADE CHANGE. ADJACENT TO THE STRUCTURES GRADIENT SHALL NOT EXCEED 6%.
21. THE TURNING RADIUS OF THE FIRE APPARATUS ACCESS ROADS SHALL BE NO LESS THAN 52 FEET OUTSIDE AND 28 FEET INSIDE TURNING RADIUS.
22. VERTICAL CLEARANCE OF ALL FIRE APPARATUS ACCESS ROADS SHALL BE NOT LESS THAN 13 FEET 6 INCHES.
23. FIRE DEPARTMENT ACCESS ROADS IN ALL RESIDENTIAL DEVELOPMENTS (EXCEPT FOR THE APARTMENT BUILDINGS) SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF NOT LESS THAN 36 FEET FLOW LINE TO THE FLOW LINE (THIS WIDTH MAY BE REDUCED TO 24 FEET, IF ALL BUILDINGS FRONTING THE STREET ARE SPRINKLERED) FOR MAIN RESIDENTIAL STREETS, WITH PARKING PERMITTED ON BOTH SIDES OF THE STREET. PRIVATE DRIVE AISLES, DRIVEWAYS, ETC. SHALL BE ALLOWED TO BE REDUCED TO A MINIMUM WIDTH OF 24 FEET WIDE FLOW LINE TO THE FLOW LINE WHEN SERVING NO MORE THAN 8 RESIDENCES, AND WHEN ON STREET PARKING IS DISALLOWED.
24. ALL FIRE APPARATUS ACCESS ROADS IN COMMERCIAL DEVELOPMENTS AND APARTMENT COMPLEXES SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF NOT LESS THAN 24 FEET (FLOW LINE TO THE FLOW LINE), PROVIDED NO PARKING IS ALLOWED ON EITHER SIDE; 32 FEET (FLOW LINE TO THE FLOW LINE), IF PARALLEL PARKING IS ALLOWED ON ONE SIDE ONLY; AND 40 FEET (FLOW LINE TO THE FLOW LINE), IF PARALLEL PARKING IS ALLOWED ON BOTH SIDES. THESE WIDTHS MAY BE REDUCED BY 4 FEET IF ALL BUILDINGS ARE SPRINKLERED.
25. A FIRE DEPARTMENT ACCESS ROAD SHALL EXTEND TO WITHIN 50 FEET OF A SINGLE EXTERIOR DOOR PROVIDING ACCESS TO THE INTERIOR OF THE BUILDING.
26. A FIRE APPARATUS ACCESS ROAD SHALL BE REQUIRED WHEN ANY PORTION OF AN EXTERIOR WALL OF THE FIRST STORY IS LOCATED MORE THAN 150 FEET FROM A FIRE DEPARTMENT VEHICLE ACCESS. THIS DISTANCE COULD BE INCREASE TO 250 FEET IF THE BUILDING IS SPRINKLERED.
27. APPROVED SECONDARY FIRE APPARATUS ACCESS SHALL BE PROVIDED FOR 100 OR MORE DWELLING UNITS, ROAD(S) WITH DEAD-ENDS OR WITH A SINGLE POINT OF ACCESS IN EXCESS OF 600 FEET, AND FOR ALL COMMERCIAL, INDUSTRIAL, AND MULTI-FAMILY RESIDENTIAL DEVELOPMENTS.
28. ALL DEAD-END FIRE APPARATUS ACCESS ROADS AND/OR FIRE LANES, PUBLIC OR PRIVATE, IN EXCESS OF 150 FEET IN LENGTH SHALL BE PROVIDED WITH AN APPROVED TURN AROUND AREA HAVING A MINIMUM DIAMETER OF 81 FT.
29. ALL FIRE APPARATUS ACCESS ROADS SHALL BE MARKED BY PLACING APPROVED SIGNS AT THE START OF THE DESIGNATED FIRE LANE, ONE SIGN AT THE END OF THE FIRE LANE AND WITH SIGNS AT INTERVALS 100 FT ALONG ALL DESIGNATED FIRE LANES. SIGNS TO BE PLACED ON BOTH SIDES OF AN ACCESS ROADWAY IF NEEDED TO PREVENT PARKING ON EITHER SIDE. SIGNS TO BE INSTALLED NO HIGHER THAN 10 FEET OR LESS THAN 6 FEET FROM ROADWAY LEVEL. THE CURB ALONG OR ON THE PAVEMENT OR CEMENT IF A CURB IS NOT PROVIDED SHALL BE PAINTED WITH A RED WEATHER RESISTANT PAINT IN ADDITION TO THE SIGNS.
30. ELECTRICALLY CONTROLLED ACCESS GATES SHALL BE PROVIDED WITH AN APPROVED EMERGENCY VEHICLE DETECTOR/RECEIVER SYSTEM. SAID SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF LAS VEGAS GUIDELINES FOR AUTOMATIC EMERGENCY VEHICLE ACCESS GATES.

LAS VEGAS FIRE DEPARTMENT — DATE

REVISED NOVEMBER 2013

CITY OF LAS VEGAS GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE "UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA NEVADA", LATEST ISSUE; THE "UNIFORM STANDARD DRAWINGS FOR PUBLIC WORKS CONSTRUCTION, CLARK COUNTY AREA NEVADA", LATEST REVISED EDITION; THE "SUMMERLIN IMPROVEMENT STANDARDS" FOR WORK IN THE SUMMERLIN AREA; AND OTHER APPLICABLE APPROVED STANDARDS ISSUED BY THE CONTROLLING AGENCY; THE UNIFORM BUILDING CODE; AND ALL LOCAL CITY CODES AND ORDINANCES APPLICABLE, EXCEPT AS NOTED ON THIS SHEET AS "DEVIATIONS FROM STANDARDS".
2. THE EXISTENCE AND LOCATION OF ANY OVERHEAD OR UNDERGROUND UTILITY LINES, PIPES, OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A RESEARCH OF THE AVAILABLE RECORDS. EXISTING UTILITIES AS SHOWN FROM CLV PLANS LIBRARY ARE APPROXIMATE AND FOR RECORD PURPOSES. EXISTING UTILITIES ARE LOCATED ON PLANS ONLY FOR THE CONVENIENCE OF THE CONTRACTOR. EXISTING UTILITY SERVICE LATERALS MAY NOT BE SHOWN ON THE PLANS. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, LOCATE ALL UNDERGROUND AND OVERHEAD INTERFERENCE'S WHICH MAY AFFECT HIS OPERATION DURING CONSTRUCTION AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO SAME. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR OVERHEAD UTILITIES SO AS TO SAFELY PROTECT ALL PERSONNEL AND EQUIPMENT, AND SHALL BE RESPONSIBLE FOR ALL COST AND LIABILITY IN CONNECTION THEREWITH.
3. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING UTILITY LINES, STRUCTURES AND STREET IMPROVEMENTS WHICH ARE TO REMAIN IN PLACE, FROM DAMAGE, AND ALL SUCH IMPROVEMENTS OR STRUCTURES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED SATISFACTORY TO THE CITY ENGINEER AND OWNING UTILITY COMPANY AT THE EXPENSE OF THE CONTRACTOR.
4. ALL CONSTRUCTION SHALL BE AS SHOWN ON THESE PLANS, ANY REVISIONS SHALL HAVE THE PRIOR WRITTEN APPROVAL OF THE CITY ENGINEER.
5. TYPE V CEMENT SHALL BE USED IN ALL OFF-SITE CONCRETE WORK. CONCRETE TO BE 3000 P.S.I. MINIMUM @ 28 DAYS. MIX DESIGNS TO BE APPROVED BY THE CITY, PRIOR TO THE USE ON THE PROJECT.
6. PERMITS ARE REQUIRED FOR ANY WORK IN THE PUBLIC RIGHTJ-OF-WAY. THE CONTRACTOR SHALL SECURE ALL PERMITS AND INSPECTIONS REQUIRED FOR THIS CONSTRUCTION.
7. EXPANSION JOINTS REQUIRED, MAXIMUM EVERY 300' IN EXTRUDED-TYPE CURB.
8. AC PAVEMENT TO BE ONE-HALF INCH (½") ABOVE LIP OF ALL GUTTERS AFTER COMPACTION, EXCEPT AT SIDEWALK RAMPS AND CROSS GUTTERS.
9. CURB AND GUTTER FOUND TO BE UNACCEPTABLE TO THE CITY OF LAS VEGAS SHALL BE REMOVED AND REPLACED PER STANDARD DRAWING 216.
10. SIDEWALK RAMPS SHALL BE CONSTRUCTED IN EACH QUADRANT OF AN INTERSECTION PER STANDARD DRAWING 235. EXACT LOCATION OF RAMPS MAY BE ADJUSTED IN THE FIELD BY A CITY INSPECTOR.
11. CONTRACTOR SHALL PROVIDE ALL NECESSARY HORIZONTAL AND VERTICAL TRANSITIONS BETWEEN NEW CONSTRUCTION AND EXISTING SURFACES TO PROVIDE FOR PROPER DRAINAGE AND FOR INGRESS AND EGRESS TO NEW CONSTRUCTION. THE EXTENT OF THE TRANSITIONS TO BE AS SHOWN ON PLANS.
12. ALL GRADING WORK SHALL CONFORM TO THE SOILS REPORT AS PREPARED BY THE (COMPANY NAME) REPORT #____ DATE ____) APPROVED BY THE CITY ENGINEER, AND AS SHOWN ON THESE PLANS.
13. EXACT LOCATION OF ALL SAWCUT LINES MAY BE ADJUSTED OR DETERMINED IN THE FIELD BY A CITY OF LAS VEGAS ENGINEER IS LOCATION ON PLANS IS NOT CLEARLY SHOWN, OR EXISTING PAVEMENT CONDITION REQUIRES RELOCATIONS.
14. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT EXISTING PERMANENT SURVEY MONUMENTS. ANY MONUMENTS DISTURBED SHALL BE REPLACED AND ADJUSTED PER AVAILABLE RECORDS IN ACCORDANCE WITH N.R.S. STATUTE NO. 625.380 & CITY OF LAS VEGAS TITLE 18, APPENDIX D.
15. UTILITY COMPANY METER BOXES, MANHOLE LIDS, VALVE COVERS, ETC., SHALL BE LOCATED OUT OF DRIVEWAYS, DRIVEWAY APRONS, FLOWLINES, AND CROSS GUTTERS UNLESS WRITTEN APPROVAL IS GRANTED BY THE UTILITY COMPANY AND THE CITY ENGINEER.

WALL NOTES:

16. ALL WALLS, NEW OR EXISTING, ARE ONLY SHOWN ON CIVIL PLANS FOR THE PURPOSE OF REVIEWING GRADING RELATIONSHIPS; FLOOD CONTROL AND SIGHT DISTANCE AT INTERSECTIONS. NEW WALLS REQUIRE A SEPARATE PERMIT AND INSPECTION BY THE BUILDING DEPARTMENT.
17. ASPHALT MIX DESIGN MUST BE SUBMITTED AND APPROVED BY THE CITY ENGINEER PRIOR TO THE PLACEMENT OF ASPHALT WITHIN CITY RIGHT OF WAY.
18. CONTRACTOR SHALL ADJUST ALL NEW AND EXISTING INLETS, VALVE BOXES, MANHOLE RIMS, AND SEWER CLEAN OUTS, ETC. TO FINISH GRADE AS APPLICABLE WHETHER OR NOT THEY ARE SHOWN ON THE PLANS.
19. MATERIALS, HANDLING AND PLACEMENT OF PORTLAND CEMENT CONCRETE SHALL BE IN ACCORDANCE WITH APPLICABLE SECTIONS OF NDOT OR THE CLARK COUNTY AREA SPECIFICATIONS (AS APPLICABLE) AND THE PLANS AND DETAILS SHOWN HEREON.
20. WHEN INSTALLING UNDERGROUND FACILITIES THAT REQUIRE UNDERGROUND LOCATING DEVICES SUCH AS MARKER BALLS, LOCATING RIBBON, ETC, THE CONTRACTOR SHALL PROVIDE WRITTEN DOCUMENTATION TO THE OFFSITE INSPECTION AND TESTING CERTIFYING THAT ALL DEVICES HAVE BEEN PLACED AND VERIFIED TO BE IN GOOD WORKING CONDITION PRIOR TO THE CONSTRUCTION OF ANY ROAD BASE.
21. SANITARY SEWER AND STORM DRAIN FINAL LOCATION MAP(S) SHALL BE PROVIDED TO THE OFFSITE INSPECTION AND TEESTING PRIOR TO PROJECT ACCEPTANCE. THE MAP(S) SHALL INCLUDE THE HORIZONTAL AND VERTICAL (INVERT) LOCATION OF PUBLIC SEWER MANHOLES, STORM DRAIN MANHOLES, STORM DRAIN LATERALS AT THE CONNECTION TO THE STORM DRAIN MAIN AND AT THE CONNECTION TO A DROP INLET, AND THE CONNECTION OF SEWER SERVICE LATERALS TO THE SERVICE MAIN AND WHERE THE SEWER SERVICE LATERALS EXITS THE PUBLIC RIGHT-OF-WAY. THE LOCATION SHALL BE DESCRIBED BY STATE PLANE COORDINATES WHICH SHALL BE BASED ON THE "NEVADA COORDINATE SYSTEM OF 1983, EAST ZONE" AS DEFINED BY THE NEVADA REVISED STATUTES CHAPTER 327, AND TIED TO THE CITY OF LAS VEGAS VERTICAL CONTROL BENCHMARK NETWORK. COORDINATES MUST BE CERTIFIED BY A NEVADA PROFESSIONAL LAND SURVEYOR TO HAVE POSITIONAL CERTAINTIES OF +/- 0.1 METER (+/- 0.3 FEET). A SEPARATE ELECTRONIC COMMA DELIMITED FILE FOR THE SANITARY SEWER AND STORM DRAIN COORDINATES SHALL ALSO ACCOMPANY THE SANITARY SEWER AND STORM DRAIN FINAL LOCATION MAP(S).
22. SANITARY SEWER SERVICE LATERALS REQUIRE THE INSTALLATION OF A MARKER BALL AT THE CONNECTION OF THE SEWER SERVICE LATERAL TO THE SEWER MAIN AND WHERE THE SEWER SERVICE LATERAL EXITS THE PUBLIC RIGHT-OF-WAY. STORM DRAIN LATERALS REQUIRE THE INSTALLATION OF A MARKER BALL AT THE CONNECTION OF THE STORM DRAIN LATERAL TO THE STORM DRAIN MAIN AND WHERE THE STORM DRAIN LATERAL EXITS THE PUBLIC RIGHT-OF-WAY OR WHERE THE STORM DRAIN LATERAL CONNECTS TO A DROP INLET. THE MARKER BALL SHALL BE 3M 4" MARKER BALL 1404-XR OR APPROVED EQUAL.
23. CCTV VIDEO INSPECTION IS REQUIRED FOR ALL SEWER AND STORM DRAINS. THE CCTV VIDEO INSPECTIONS NEED TO BE PERFORMED PER THE DESIGN AND CONSTRUCTION STANDARDS FOR WASTEWATER COLLECTION SYSTEMS LATEST EDITION.
24. A SEPARATE BORING PERMIT IS REQUIRED FOR ALL BORING ACTIVITIES.

REVISED 4/15/10

CITY OF LAS VEGAS TRAFFIC NOTES

1. ALL CONSTRUCTION SIGNING, BARRICADING, AND TRAFFIC DELINEATION SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST EDITION.
2. THE STREET SIGN CONTRACTOR SHALL OBTAIN STREET NAMES AND BLOCK NUMBERING FROM THE PLANNING DEPARTMENT PRIOR TO CONSTRUCTION.
3. BEFORE ANY WORK IS STARTED IN THE RIGHT-OF-WAY, THE CONTRACTOR SHALL INSTALL ALL ADVANCED WARNING SIGNS FOR THE CONSTRUCTION ZONE. THE CONTRACTOR SHALL INSTALL TEMPORARY STOP SIGNS AT ALL NEW STREET ENCROACHMENTS INTO EXISTING CITY STREETS WHERE WARRANTED IMMEDIATELY AFTER FIRST GRADING WORK IS ACCOMPLISHED, AND SHALL MAINTAIN SAID SIGNS UNTIL PERMANENT SIGNS ARE INSTALLED.
4. WHEN A DESIGNATED "SAFE ROUTE TO SCHOOL" IS ENCROACHED UPON BY A CONSTRUCTION WORK ZONE AND PUBLIC WORKS STAFF IDENTIFIES A NEED FOR STUDENTS TO BE ASSISTED IN THE SAFE CROSSING THROUGH THAT WORK ZONE, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE A QUALIFIED "CROSSING GUARD". THE GUARD SHALL BE PRESENT FOR THE FULL DURATION OF TIME THAT CHILDREN ARE LIKELY TO BE PRESENT.
5. IF THE IMPROVEMENTS NECESSITATE THE OBLITERATION, TEMPORARY OBSTRUCTION, TEMPORARY REMOVAL OR RELOCATION OF ANY EXISTING TRAFFIC PAVEMENT MARKING, SUCH PAVEMENT MARKING SHALL BE RESTORED OR REPLACED WITH LIKE MATERIALS TO THE SATISFACTION OF THE CITY TRAFFIC ENGINEER.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL PERMANENT SIGNS SHOWN ON THE PLANS. ALL NEW SIGNS SHALL BE FABRICATED WITH DIAMOND GRADE VIP CLASS 6 REFLECTIVE SHEETING OR APPROVED EQUAL. ALL NEW TRAFFIC SIGNS, EXCEPT STREET NAME AND SCHOOL SPEED LIMIT SIGNS, SHALL HAVE 3M SERIES 1160 OR APPROVED EQUIVALENT ANTI-GRAFFITI PROTECTIVE OVERLAY FILM; SCHOOL ZONE SIGNS SHALL HAVE 3M SERIES 1150 ANIT-GRAFFITI PROTECTIVE OVERLAY FILM. STREET NAME SIGNS SHALL CONFORM IN THEIR ENTIRETY TO CURRENT CITY STANDARDS. ALL OTHER SIGNS SHALL BE STANDARD SIZE UNLESS OTHERWISE SPECIFIED ON THE PLANS. ALL SIGN POSTS SHALL BE INSTALLED IN ACCORDANCE WITH THE CURRENT CITY STANDARDS.
7. WHEN A PROPOSED STREET LIGHT STANDARD IS LOCATED WITHIN FIVE (5') FEET OF ANY PROPOSED SIGN SHOWN ON THE PLANS TO BE MOUNTED ON A SIGNPOST, THE SIGN SHALL BE MOUNTED ON THE STREET LIGHT STANDARD AND THE SIGNPOST SHALL BE ELIMINATED.
8. ALL PERMANENT TRAFFIC CONTROL DEVICES CALLED FOR HEREON SHALL BE IN PLACE AND IN FINAL POSITION PRIOR TO ALLOWING ANY PUBLIC TRAFFIC ONTO THE PORTIONS OF THE ROAD(S) BEING IMPROVED HERE UNDER, REGARDLESS OF THE STATUS OF COMPLETION OF PAVING OR OTHER OFF-SITE IMPROVEMENTS CALLED FOR BY THESE PLANS.
9. STREET SIGNS AND STOP SIGNS SHALL BE INSTALLED PER CITY STANDARD SPECIFICATIONS FOR PLACEMENT OF STREET NAME SIGNS.
10. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY TRAFFIC CONTROL DEVICES AND FLAGGERS TO INSURE THE SAFETY OF THE PUBLIC IN OR AROUND THE WORK AREA. THE CONTRACTOR SHALL HAVE A CERTIFIED ATSSA TRAFFIC CONTROL TECHNICIAN OR IMSA WORK ZONE SAFETY SPECIALIST SET UP, MAINTAIN AND/OR REMOVE ALL TRAFFIC CONTROL DEVICES IN THE CITY OF LAS VEGAS RIGHT-OF-WAY.
11. WORK IN PUBLIC STREETS, ONCE BEGUN, SHALL BE EXPEDITED TO COMPLETION SO AS TO PROVIDE MINIMUM INCONVENIENCE TO ADJACENT PROPERTY OWNERS AND TO TO THE TRAVELING PUBLIC.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING CITIZENS AREA TRANSIT (C.A.T.) IF THE CONSTRUCTION INTERRUPTS OR RELOCATES A BUS STOP OR HAS AN ADVERSE EFFECT ON BUS SERVICE ON THAT STREET TO ARRANGE FOR TEMPORARY RELOCATION OF STOP.
13. GUARDS SHALL BE OBTAINED BY CONTACTING THE METROPOLITAN POLICE DEPARTMENT SPECIAL EVENTS UNIT (PHONE # 828-3442) WHO WILL PROVIDE OFFICERS PROPERLY TRAINED IN TRAFFIC CONTROL. FEES FOR THE USE OF THESE OFFICERS SHALL BE SET BY METRO AND WILL BE PAID BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR ALL ARRANGEMENTS WITH METRO.
14. ANY WORK WITHIN 300' OF A SIGNALIZED INTERSECTION WILL BE NIGHT WORK, UNLESS DIRECTED BY THE CITY OF LAS VEGAS TRAFFIC ENGINEER.
15. CONTRACTOR SHALL CONTACT THE TRAFFIC ENGINEERING DIVISION (TRANSPORTATION SECTION) THROUGH THE PROJECT'S OFFSITE INSPECTOR PRIOR TO INITIATING PAVING TO RECEIVE DIRECTION FOR ANY PERMANENT OR TEMPORARY MODIFICATIONS TO THE APPROVED DRAWINGS REGARDING FINAL PAVEMENT TRANSITIONS, MARKINGS AND SIGNING THAT ARE REQUIRED TO MATCH ADJACENT ROADWAY SEGMENTS. THE CONTRACTOR SHALL PROVIDE A DRAWING FOR APPROVAL BY THE TRAFFIC ENGINEERING DIVISION DEPICTING ANY ADJUSTMENTS TO THE FINAL PAVEMENT MARKINGS AND SIGNAGE, WHICH MAY INCLUDE OMITTING, ADDING OR MODIFYING PAVEMENT MARKINGS AND TRAFFIC CONTROL SIGNS SUCH THAT ADEQUATE TRANSITIONS AND LANE TERMINATIONS BETWEEN ADJACENT ROADWAY SEGMENTS ARE CONSTRUCTED.

REVISED 4/15/10

CITY OF LAS VEGAS STREETLIGHT NOTES

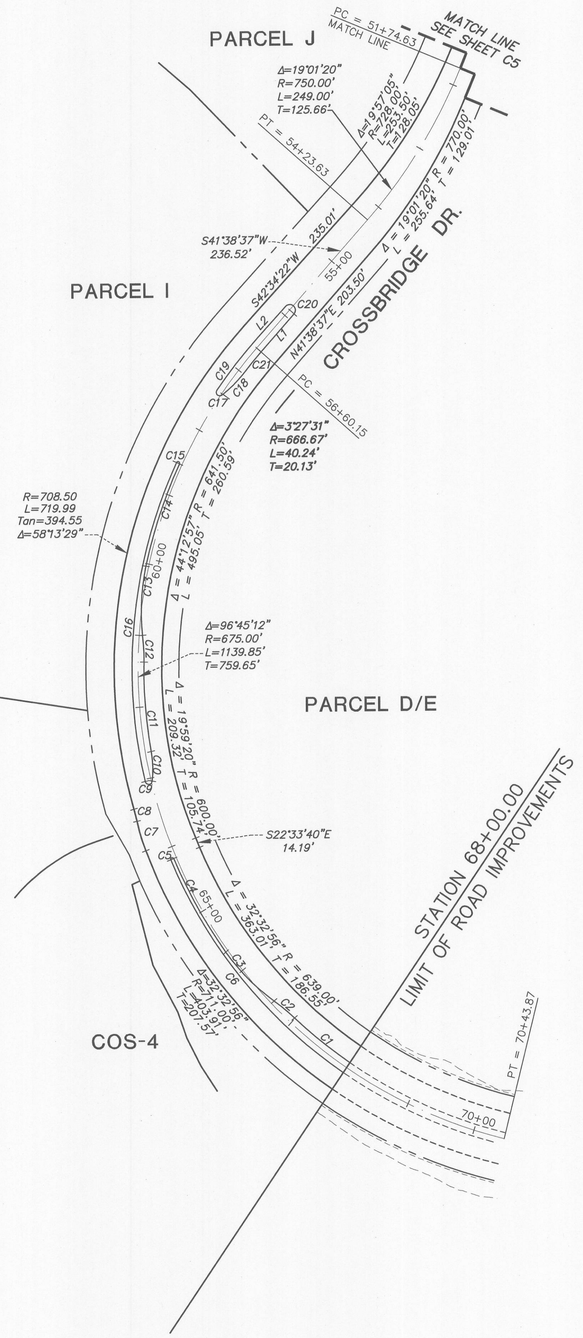
1. ALL STREET LIGHTING INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE STREET LIGHTING PLANS, THE "UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA", LATEST REVISION, AND THE "UNIFORM STANDARD DRAWINGS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA", LATEST REVISION, AND ANY ADOPTED SPECIAL AREA STANDARDS.
2. NO DEVIATION OF STREET LIGHT, PULL BOX, CONDUITS (ETC.) LOCATIONS SHALL BE PERMITTED WITHOUT WRITTEN APPROVAL OF THE TRAFFIC ENGINEER AND THE CITY ENGINEER.
3. ALL EXISTING STREET LIGHTING SHALL REMAIN OPERATIONAL DURING CONSTRUCTION.
4. ALL STREET LIGHTING CONDUITS STUB SHALL HAVE AT LEAST ONE GREEN #8 THW WIRE INSTALLED, AS TRACER WIRE. WHEN "EMPTY" CONDUIT IS COMPLETELY INSTALLED FROM PB TO PB, IT SHALL HAVE MINIMUM OF 2 #4 AND 1 #8 THW WIRE WITH THE ENDS TAPED OR "SAFE OFF" PRIOR TO FINAL INSPECTION.
5. ANY STRUCTURE SUCH AS BLOCK WALLS, CHAIN LINK FENCES, RETAINING WALLS, ETC., SHALL LEAVE A MINIMUM CLEARANCE IN ACCORDANCE WITH THE USD NO. 320A.
6. AS-BUILT DRAWINGS SHALL BE SUPPLIED TO THE TEFO PRIOR TO ANY PRE-FINAL INSPECTION. THE AS-BUILT DRAWING NEEDS TO BE STAMPED AS-BUILT AND SIGNED BY THE PREPARER.
7. SERVICE POINT SHALL BE COORDINATED WITH NV ENERGY COMPANY, AND WHEREVER POSSIBLE, BE LOCATED NEAR THE CENTER OF THE CIRCUIT. SERVICE POINTS SHALL BE SHOWN ON THE PLANS.
8. IT SHALL BE ASSUMED THAT IN THE ABSENCE OF AN EXISTING, WORKABLE CIRCUIT TO ATTACH TO, ALL INSTALLATIONS SHALL REQUIRE A NEW SERVICE FOR OPERATION OF THE CIRCUIT.
9. WHEREVER THERE IS AN OVERHEAD UTILITY THAT MAY CONFLICT WITH THE INSTALLATION OF STREET LIGHTING CIRCUITS AND/OR POLES, THESE CONFLICTS MUST BE RESOLVED BETWEEN THE DEVELOPER AND THE UTILITIES INVOLVED, AT NO EXPENSE TO THE CITY OF LAS VEGAS, BEFORE STREETLIGHT BASES ARE INSTALLED.
10. THE CONTRACTOR SHALL FURNISH COMPLETE SERVICE TO TRANSFORMERS AND CONTROL SYSTEMS IF REQUIRED ON PLANS.
11. THE DEVELOPER/OWNER WILL BE REQUIRED TO SUPPLY POWER TO ALL NEW PUBLIC STREET LIGHTS INSTALLED UNDER THIS DESIGN PRIOR TO BOND RELEASE OR PROJECT COMPLETION. THE DEVELOPER/OWNER WILL BE RESPONSIBLE FOR ALL ITEMS ASSOCIATED WITH THE INSTALLATION, CONSTRUCTION, ENERGIZING, MAINTENANCE AND OPERATIONAL COST OF SAID STREET LIGHTS PRIOR TO PROJECT COMPLETION. REFER TO THE PLAN FOR ANY NEW SERVICE REQUIREMENTS. THE TRANSFER OF OWNERSHIP FROM THE DEVELOPER/OWNER TO THE CITY OF LAS VEGAS FOR ALL NEW PUBLIC STREET LIGHT/S AND/OR SERVICE/S INSTALLED UNDER THIS PLAN WILL BE IN CONJUNCTION WITH THIS PROJECT COMPLETION. COORDINATE ALL MAINTENANCE AND OPERATIONAL TRANSFERS WITH THE CITY OF LAS VEGAS TRAFFIC ENGINEERING DEPARTMENT (TEFO) AT (702) 229-6331.

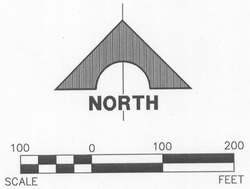
REVISED 04/15/10

LAS VEGAS VALLEY WATER DISTRICT (LVVWD) STANDARD NOTES

LVVWD PROJECT # 114100

1. NO WORK SHALL BEGIN UNTIL THE WATER PLANS HAVE BEEN APPROVED FOR CONSTRUCTION BY THE LVVWD. FOLLOWING WATER PLAN APPROVAL, NOTICE SHALL BE GIVEN TO THE LVVWD COMMUNICATION SUPPORT CENTER (258-7171) TWO (2) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION. FOR FUTURE INSPECTIONS, NOTICE MUST BE GIVEN BY 2:00 P.M. THE BUSINESS DAY PRIOR TO THE REQUESTED LVVWD INSPECTION. WHEN REQUESTING INSPECTIONS, PLEASE REFER TO THE PROJECT # IDENTIFIED ABOVE
2. ALL WORK SHALL CONFORM TO LVVWD STANDARD PLATES, DRAWINGS, AND SPECIFICATIONS, AND TO THE 2010 EDITION OF THE UNIFORM DESIGN AND CONSTRUCTION STANDARDS FOR POTABLE WATER SYSTEMS (UDACS). THE LATEST EDITION OF UDACS SHALL SUPERSEDE ANY CONFLICTS CONTAINED IN THE APPROVED DRAWINGS AND/OR SPECIFICATIONS.
3. ALL WORK, EXCEPT AS MODIFIED BY THESE PLANS OR BY NOTE 2 ABOVE, SHALL BE DONE IN ACCORDANCE WITH THE MOST RECENT DRAFT OR EDITION OF THE UNIFORM SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFFSITE IMPROVEMENT, CLARK COUNTY AREA.
4. A SINGLE PIPE MATERIAL SHALL BE USED THROUGHOUT THE PROJECT UNLESS OTHERWISE APPROVED BY THE LVVWD.
5. ALL SERVICE LATERALS TWO (2) INCHES IN DIAMETER AND SMALLER SHALL BE TYPE K COPPER TUBING WITH LVVWD APPROVED SERVICE SADDLES.
6. ALL WATER METER BOXES SHALL BE LOCATED OUTSIDE OF DRIVEWAY AREAS.
7. ALL VALVES SHALL BE LOCATED OUTSIDE OF DRIVEWAYS, VALLEY AND CURB GUTTERS.
8. ALL WATER AND STORM DRAIN OR SANITARY SEWER CROSSINGS SHALL CONFORM TO SECTION 2.22 OF THE 2010 EDITION OF THE UDACS
9. ALL WATER FACILITIES SHALL BE FILLED, DISINFECTED, PRESSURE TESTED, FLUSHED, FILLED, AND AN ACCEPTABLE WATER SAMPLE OBTAINED, PRIOR TO CONNECTION TO THE LVVWD DISTRIBUTION SYSTEM.
10. THE CONTRACTOR MUST OBTAIN ALL METERS TWO (2) INCHES AND SMALLER FROM LVVWD CENTRAL STORES. TELEPHONE 258-3152 OR 258-3802, TWO (2) WORKING DAYS PRIOR TO METER PICKUP.
11. ANY INTERRUPTION OF SERVICE MUST BE PERFORMED IN ACCORDANCE WITH UDACS SECTION 3.14.01, AND APPROVED BY THE LVVWD INSPECTION DIVISION PRIOR TO SHUTDOWN. PROPER WRITTEN NOTIFICATION MUST BE GIVEN TO ALL AFFECTED CUSTOMERS.
12. ALL WATER FACILITY CONSTRUCTION MATERIALS USED MUST BE LISTED ON THE LVVWD PRE-APPROVED MATERIALS AND MANUFACTURER'S LISTING FOR NEW FACILITI





BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

LINE	BEARING	DISTANCE
L1	S41°38'37"W	70.29'
L2	S42°34'22"W	59.22'

CURVE	DELTA	RADIUS	LENGTH	TANGENT
C1	8°33'35"	666.67'	99.60'	49.89'
C2	7°07'11"	300.00'	37.28'	18.66'
C3	18°26'43"	300.00'	96.58'	48.71'
C4	12°39'49"	678.67'	150.00'	75.31'
C5	180°00'00"	2.33'	7.32'	–
C6	32°32'56"	683.33'	388.19'	199.49'
C7	8°12'19"	300.00'	42.96'	21.52'
C8	3°20'04"	300.00'	17.46'	8.73'
C9	160°49'03"	5.00'	14.03'	29.59'
C10	15°50'17"	150.00'	41.46'	20.87'
C11	10°44'30"	666.67'	124.99'	62.68'
C12	7°07'11"	300.00'	37.28'	18.66'
C13	18°26'43"	300.00'	96.58'	48.71'
C14	12°39'49"	678.67'	150.00'	75.31'
C15	180°00'00"	2.33'	7.32'	–
C16	38°04'31"	683.33'	454.10'	235.79'
C17	160°49'03"	5.00'	14.03'	29.59'
C18	15°50'17"	150.00'	41.46'	20.87'
C19	7°43'57"	683.33'	92.22'	46.18'
C20	180°00'00"	7.80'	24.52'	–
C21	3°27'31"	666.67'	40.24'	20.13'

PROFESSIONAL ENGINEER - STATE OF NEVADA
VICKI D. MARJERRISON
Exp. 12/31/2015
CIVIL
No. 13079
DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

PROJECT NO. 62A.24.212

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PLOT TIME: 13:41:30

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SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

HORIZONTAL CONTROL PLAN 1

DRAWING
C4
4 OF 82 SHTS

CLV DRAWING NO. XXXXX

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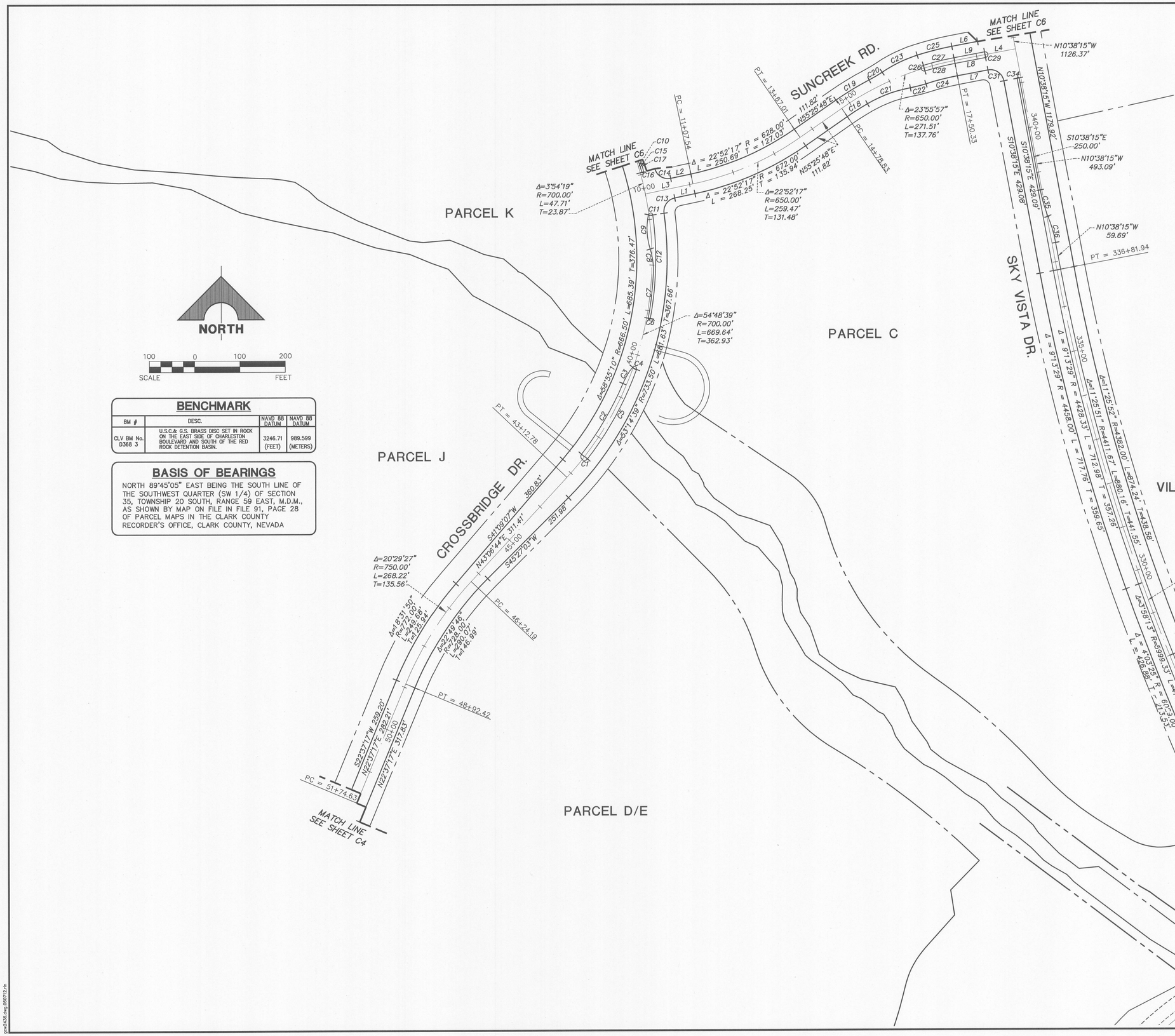
emarjerrison



BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. 0368 3	U.S.C.&.G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

CURVE	DELTA	RADIUS	LENGTH	TANGENT
C1	180°00'00"	8.33'	26.17'	INFINITE'
C2	14°56'20"	691.67'	180.34'	90.69'
C3	15°53'16"	150.00'	41.59'	20.93'
C4	160°52'37"	5.00'	14.04'	29.68'
C5	18°10'27"	708.33'	224.68'	113.29'
C6	180°00'00"	2.33'	7.32'	INFINITE'
C7	8°08'33"	703.67'	100.00'	50.08'
C8	20°09'20"	150.00'	52.77'	26.66'
C9	28°59'19"	150.00'	75.89'	38.78'
C10	2°09'48"	700.00'	26.43'	13.22'
C11	160°52'37"	5.00'	14.04'	29.68'
C12	18°25'57"	708.33'	227.88'	114.93'
C13	86°05'41"	30.00'	45.08'	28.02'
C14	86°05'41"	30.00'	45.08'	28.02'
C15	2°08'34"	703.67'	26.32'	13.16'
C16	180°00'00"	2.33'	7.32'	INFINITE'
C17	2°08'34"	708.33'	26.49'	13.25'
C18	4°48'03"	628.00'	52.62'	26.33'
C19	7°17'14"	672.00'	85.47'	42.79'
C20	6°21'03"	300.00'	33.25'	16.64'
C21	19°18'13"	300.00'	101.07'	51.02'
C22	6°47'53"	300.00'	35.59'	17.82'
C23	16°22'12"	300.00'	85.71'	43.15'
C24	6°37'35"	616.00'	71.24'	35.66'
C25	6°37'35"	681.50'	78.82'	39.45'
C26	180°00'00"	6.33'	19.89'	INFINITE'
C27	6°04'06"	656.33'	69.51'	34.79'
C28	6°04'06"	643.67'	68.17'	34.12'
C29	180°00'00"	6.33'	19.89'	INFINITE'
C30	2°28'04"	4413.17'	190.08'	95.05'
C31	90°00'00"	30.00'	47.12'	30.00'
C32	10°18'34"	300.00'	53.98'	27.06'
C33	11°54'13"	300.00'	62.33'	31.28'
C34	180°00'00"	2.33'	7.32'	INFINITE'
C35	11°28'42"	300.00'	60.10'	30.15'
C36	11°28'42"	300.00'	60.10'	30.15'
C37	12°42'59"	300.00'	66.58'	33.43'
C38	11°02'09"	300.00'	57.78'	28.98'
C39	2°16'56"	3486.33'	138.87'	69.44'
C40	10°36'44"	600.00'	111.13'	55.72'
C41	171°39'37"	2.17'	6.49'	29.70'
C42	4°45'04"	4414.67'	366.07'	183.14'

LINE	BEARING	DISTANCE
L1	N78°18'05"E	45.82'
L2	N78°18'05"E	45.82'
L3	S78°18'05"W	107.54'
L4	S79°21'45"W	136.49'
L5	S22°04'06"E	60.13'
L6	N79°21'45"E	57.49'
L7	N79°21'45"E	68.49'
L8	N79°21'45"E	68.49'
L9	N79°21'45"E	68.49'

REGISTERED ENGINEER - STATE OF NEVADA
VICKI D. MARJERRISON
No. 13079
PROFESSIONAL ENGINEER
CIVIL
DATE: 5-14-14

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GOW APP
		TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION				

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SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
HORIZONTAL CONTROL PLAN 2

DRAWING C5
5 OF 82 SHTS

CLV DRAWING NO. XXXXX

emorjerisan

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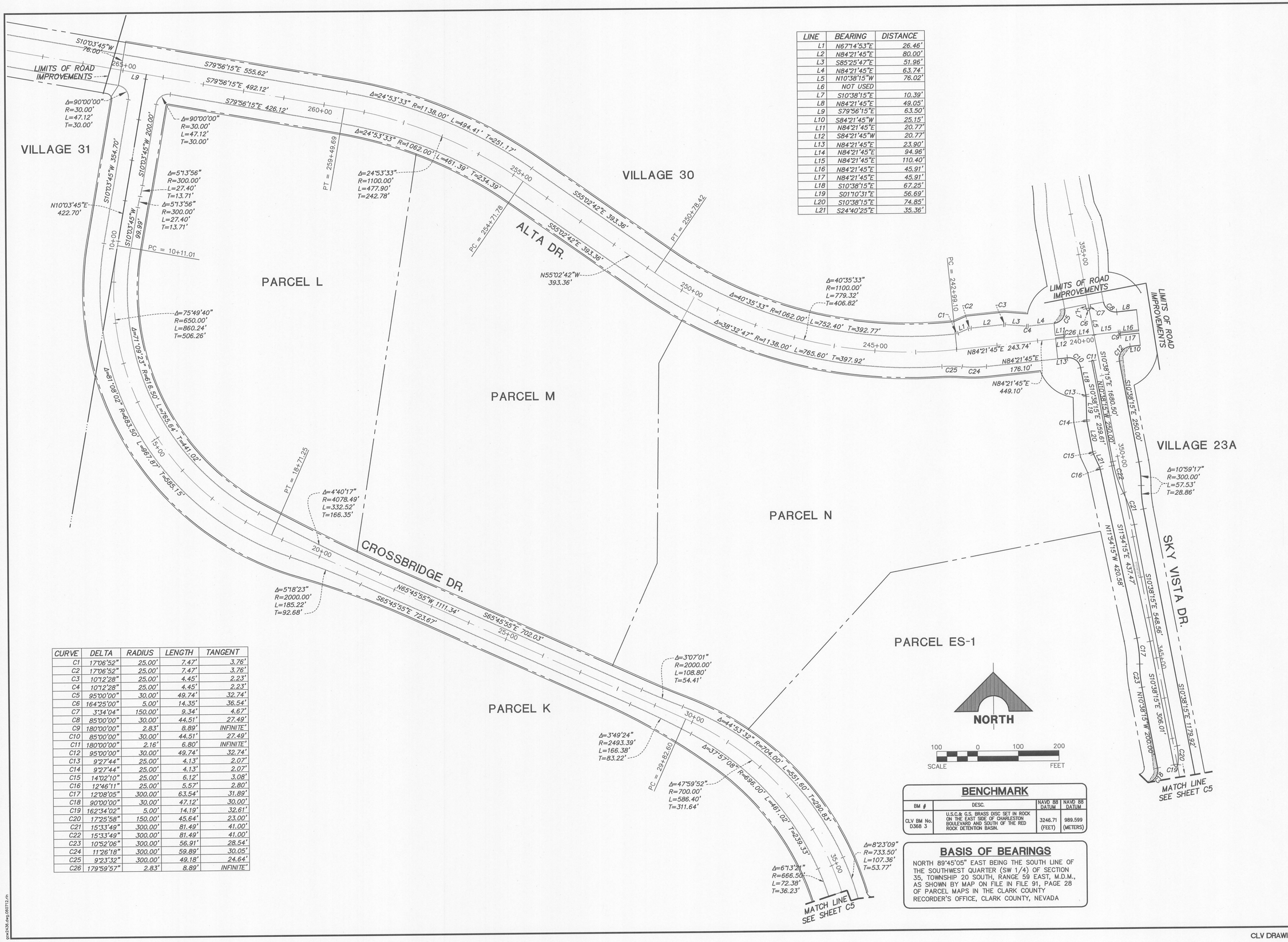

LINE	BEARING	DISTANCE
L1	N67°14'53"E	26.46'
L2	N84°21'45"E	80.00'
L3	S85°25'47"E	51.96'
L4	N84°21'45"E	63.74'
L5	N10°38'15"W	76.02'
L6	NOT USED	
L7	S10°38'15"E	10.39'
L8	N84°21'45"E	49.05'
L9	S79°56'15"E	63.50'
L10	S84°21'45"W	25.15'
L11	N84°21'45"E	20.77'
L12	S84°21'45"W	20.77'
L13	N84°21'45"E	23.90'
L14	N84°21'45"E	94.96'
L15	N84°21'45"E	110.40'
L16	N84°21'45"E	45.91'
L17	N84°21'45"E	45.91'
L18	S10°38'15"E	67.25'
L19	S01°10'31"E	56.69'
L20	S10°38'15"E	74.85'
L21	S24°40'25"E	35.36'

CURVE	DELTA	RADIUS	LENGTH	TANGENT
C1	17°06'52"	25.00'	7.47'	3.76'
C2	17°06'52"	25.00'	7.47'	3.76'
C3	10°12'28"	25.00'	4.45'	2.23'
C4	10°12'28"	25.00'	4.45'	2.23'
C5	95°00'00"	30.00'	49.74'	32.74'
C6	164°25'00"	5.00'	14.35'	36.54'
C7	3°34'04"	150.00'	9.34'	4.67'
C8	85°00'00"	30.00'	44.51'	27.49'
C9	180°00'00"	2.83'	8.89'	INFINITE'
C10	85°00'00"	30.00'	44.51'	27.49'
C11	180°00'00"	2.16'	6.80'	INFINITE'
C12	95°00'00"	30.00'	49.74'	32.74'
C13	9°27'44"	25.00'	4.13'	2.07'
C14	9°27'44"	25.00'	4.13'	2.07'
C15	14°02'10"	25.00'	6.12'	3.08'
C16	12°46'11"	25.00'	5.57'	2.80'
C17	12°08'05"	300.00'	63.54'	31.89'
C18	90°00'00"	30.00'	47.12'	30.00'
C19	162°34'02"	5.00'	14.19'	32.61'
C20	17°25'58"	150.00'	45.64'	23.00'
C21	15°33'49"	300.00'	81.49'	41.00'
C22	15°33'49"	300.00'	81.49'	41.00'
C23	10°52'06"	300.00'	56.91'	28.54'
C24	11°26'18"	300.00'	59.89'	30.05'
C25	9°23'32"	300.00'	49.18'	24.64'
C26	179°59'57"	2.83'	8.89'	INFINITE'

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

PROFESSIONAL ENGINEER - STATE OF NEVADA
VICKI D. MARJERRISON
Exp. 12/31/2015
CIVIL
No. 13079
DATE: 5-14-14

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

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SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
HORIZONTAL CONTROL PLAN 3

DRAWING
C6
6 OF 82 SHTS

CLV DRAWING NO. XXXXX

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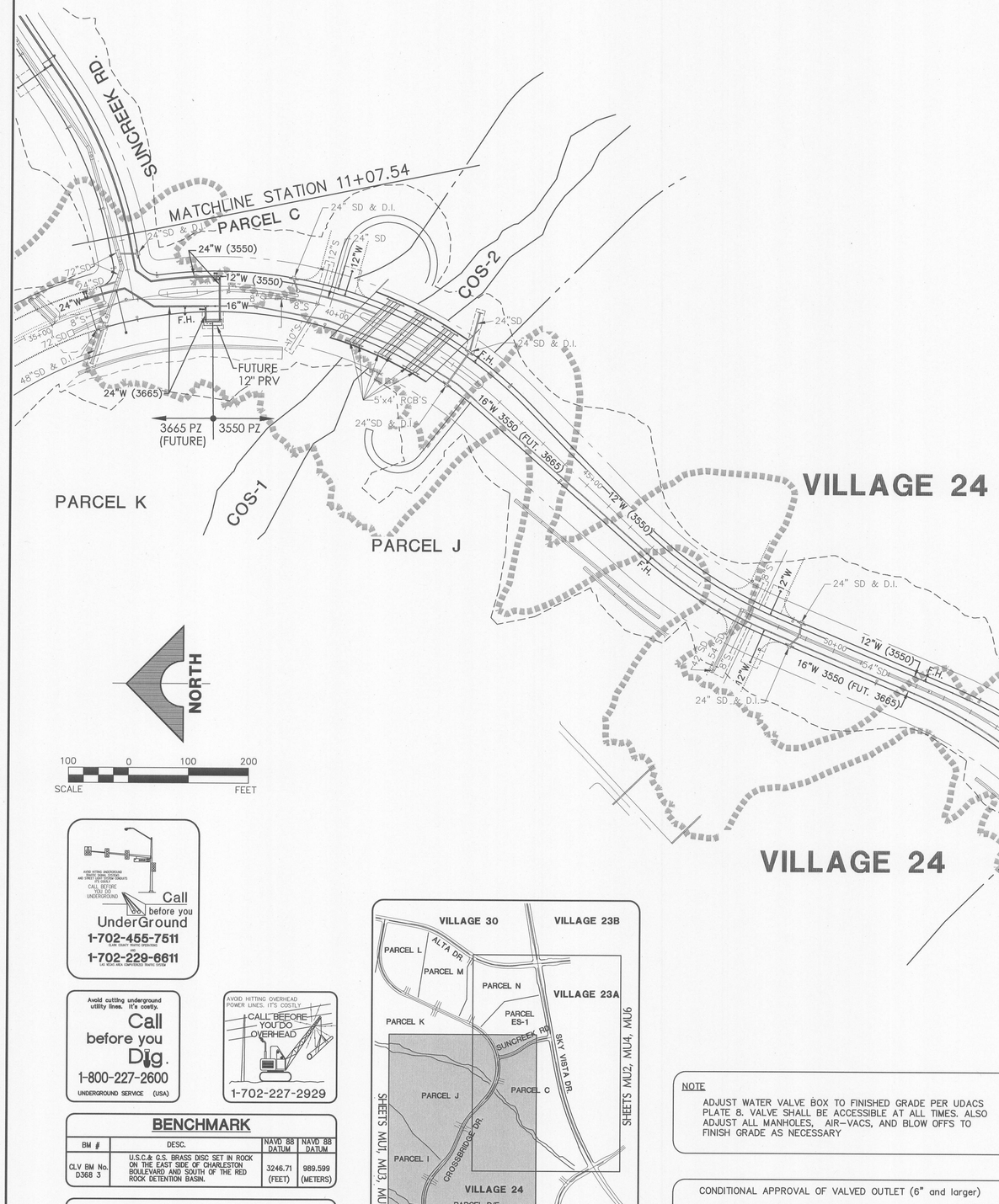

WATER QUANTITIES (PUBLIC)

8" DIP WATER (PRESSURE CLASS 250)	69	LF
10" DIP WATER (PRESSURE CLASS 250)	315	LF
12" DIP WATER (PRESSURE CLASS 250)	3335	LF
16" DIP WATER (PRESSURE CLASS 250)	2642	LF
24" DIP WATER (PRESSURE CLASS 250)	1084	LF
24" DIP WATER (PRESSURE CLASS 300)	246	LF
BANK "A"; 1-6" & 2-4" SCHD 40 PVC	641	LF
BANK "B"; 2-4" SCHD 40 PVC	331	LF
FIRE HYDRANT ASSEMBLY	12	EA
1 1/2" IRRIGATION METER W/1 1/2" RPPA	1	EA
6" MANUAL BLOWOFF ASSEMBLY	4	EA
4" COMBINATION AIR VALVE ASSEMBLY	1	EA
8" CAP W/2" BLOWOFF	1	EA
10" CAP W/2" BLOWOFF	3	EA
12" CAP W/2" BLOWOFF	6	EA
16" CAP W/2" BLOWOFF	1	EA
24" BLIND FLANGE W/2" MANUAL AIR RELEASE	1	EA
8" GATE VALVE	2	EA
10" GATE VALVE	2	EA
12" GATE VALVE	8	EA
16" GATE VALVE	3	EA
24" GATE VALVE	3	EA
24"x8" TEE	1	EA
12"x12" TEE	4	EA
16"x12" TEE	2	EA
24"x10" MECHANICAL TAPPING TEE	1	EA
24"x24" TEE	2	EA
12"x10" REDUCER	2	EA
16"x12" REDUCER	1	EA
24"x16" REDUCER	1	EA
24"x12" REDUCER	1	EA
8" 45° BEND	2	EA
10" 45° BEND	6	EA
12" 22-1/2° BEND	4	EA
12" 11-1/4° BEND	4	EA
16" 90° BEND	1	EA
16" 22-1/2° BEND	2	EA
16" 11-1/4° BEND	4	EA
24" 90° BEND	2	EA
24" 45° BEND	5	EA
24" 22-1/2° BEND	1	EA
24" 11-1/4° BEND	2	EA

QUANTITIES ARE ESTIMATED ONLY. CONTRACTOR IS TO VERIFY DURING BIDDING PROCESS.

FOR EX. IMPROVEMENTS, SEE:
VILLAGE 24 UNIT 1 IMPROVEMENTS
By G. C. WALLACE, INC.
JOB # 62A.24.211
CITY OF LAS VEGAS # 107-Y4932

NORTH

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BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

SHEET INDEX MAP

NOTE

ADJUST WATER VALVE BOX TO FINISHED GRADE PER UDACS PLATE 8. VALVE SHALL BE ACCESSIBLE AT ALL TIMES. ALSO ADJUST ALL MANHOLES, AIR-VACS, AND BLOW OFFS TO FINISH GRADE AS NECESSARY

CONDITIONAL APPROVAL OF VALVED OUTLET (6" and larger)

THE WATER PLANS SHOW ONE OR MORE VALVED OUTLETS EXTENDING OUT OF PAVED AREAS. INSTALLATION OF THESE OUTLETS IS ACCEPTABLE ; HOWEVER, IF THE OUTLETS ARE INCORRECTLY LOCATED OR NOT USED FOR ANY REASON WHEN THE PROPERTY IS ACTUALLY DEVELOPED, THE DEVELOPER SHALL ABANDON THE OUTLETS AT THE CONNECTION TO THE ACTIVE MAIN IN ACCORDANCE WITH THE DISTRICT'S STANDARDS, AND AT THE DEVELOPER'S EXPENSE. APPROVAL OF THE VALVED OUTLET DOES NOT PROVIDE OR IMPLY A WATER COMMITMENT.

APPROVED FOR CONSTRUCTION

CITY OF LAS VEGAS FIRE DEPARTMENT — DATE

APPROVAL:

LAS VEGAS VALLEY WATER DISTRICT (PROJECT # 114100) — DATE

ENGINEER - STATE OF NEVADA - VICKI E. WILKERSON - No. 13075 - PROFESSIONAL - Exp. 12/31/2015 - CIVIL
DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

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SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

WATER MASTER PLAN 1

DRAWING MU1
7 OF 82 SHTS

CLV DRAWING NO. XXXXX

emorgenson

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VILLAGE 24

VILLAGE 23A

PARCEL C

PARCEL ES-1

PARCEL N

PARCEL M

SUNCREEK RD.

SKY VISTA DR.

ALTA DR.

CROSSBRIDGE DR.

DESERT MOON RD.

COS-2

STATION 11+07.54 MATCHLINE

FOR EX. WATER LINE, SEE:
CONTRACT NO. C1117
3665 ZONE SOUTH PIPELINE
PHASE 1
by GCW, CLV # 565-406

FOR EXISTING 3550 WATER, SEE:
VILLAGE 23B 3550 ZONE
24" WATERLINE - PHASE 2
By G. C. WALLACE, INC.
REF. # 62A-W04-216
CLV DRAWING # 565-405-PH2

FOR EXISTING 3550 WATER, SEE:
VILLAGE 23B 3550 ZONE
24" WATERLINE - PHASE 2
By G. C. WALLACE, INC.
REF. # 62A-W04-216
CLV DRAWING # 565-405-PH2

FOR EX. IMPROVEMENTS, SEE:
VILLAGE 23A/23B ALTA DRIVE
IMPROVEMENTS
by G. C. WALLACE, INC.
JOB # 62023.270, CLV # ———

FOR EX. STORM DRAIN IMPS, SEE:
VILLAGE 23A/23B ALTA DRIVE RCB
REGIONAL DRAINAGE IMPROVEMENTS
by G. C. WALLACE, INC.
JOB # 62052.233, CLV # 327V269

FOR EX. ROUGH GRADING, SEE:
VILLAGE 23B WATERLINE
IMPROVEMENT GRADING
by G. C. WALLACE, INC.
JOB # 62023.260, CLV # 565-408

FOR EX. ROUGH GRADING, SEE:
VILLAGE 23A - ROUGH GRADING
By G. C. WALLACE, INC.
JOB # 62023.010
CITY OF LAS VEGAS # 107-V3574

FOR EX. IMPROVEMENTS, SEE:
VILLAGE 24 UNIT 1 IMPROVEMENTS
By G. C. WALLACE, INC.
JOB # 62A.24.211
CITY OF LAS VEGAS # 107-Y4832

FOR EXISTING IMPROVEMENTS, SEE:
THE PASEOS - VILLAGE 23A
UNIT 1 IMPROVEMENTS
By G. C. WALLACE, INC.
JOB # 62023.221
CITY OF LAS VEGAS #107-V3574-1

FOR EXISTING IMPROVEMENTS, SEE:
VILLAGE 23A/24 SKY VISTA DRIVE
IMPROVEMENTS
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JOB # 62024.220
CITY OF LAS VEGAS # 107-V4292

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NORTH

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BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

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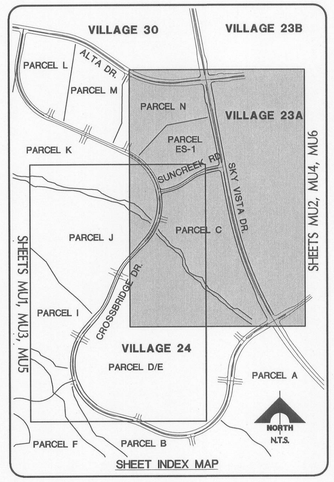

SHEET INDEX MAP

WATER QUANTITIES (PUBLIC)

SEE SHEET MU1

NOTE

ADJUST WATER VALVE BOX TO FINISHED GRADE PER UDACS PLATE 8. VALVE SHALL BE ACCESSIBLE AT ALL TIMES. ALSO ADJUST ALL MANHOLES, AIR-VACS, AND BLOW OFFS TO FINISH GRADE AS NECESSARY

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APPROVED FOR CONSTRUCTION

CITY OF LAS VEGAS FIRE DEPARTMENT — DATE

APPROVAL:

LAS VEGAS VALLEY WATER DISTRICT (PROJECT # 114100) — DATE

ENGINEER - STATE OF NEVADA
VICKI D. MARJERRISON
No. 13079
PROFESSIONAL ENGINEER
CIVIL
DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

PROJECT NO. 62A.24.212
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PLOT TIME: 13:42:07

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SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

WATER MASTER PLAN 2

DRAWING MU2
8 OF 82 SHTS

CLV DRAWING NO. XXXXX

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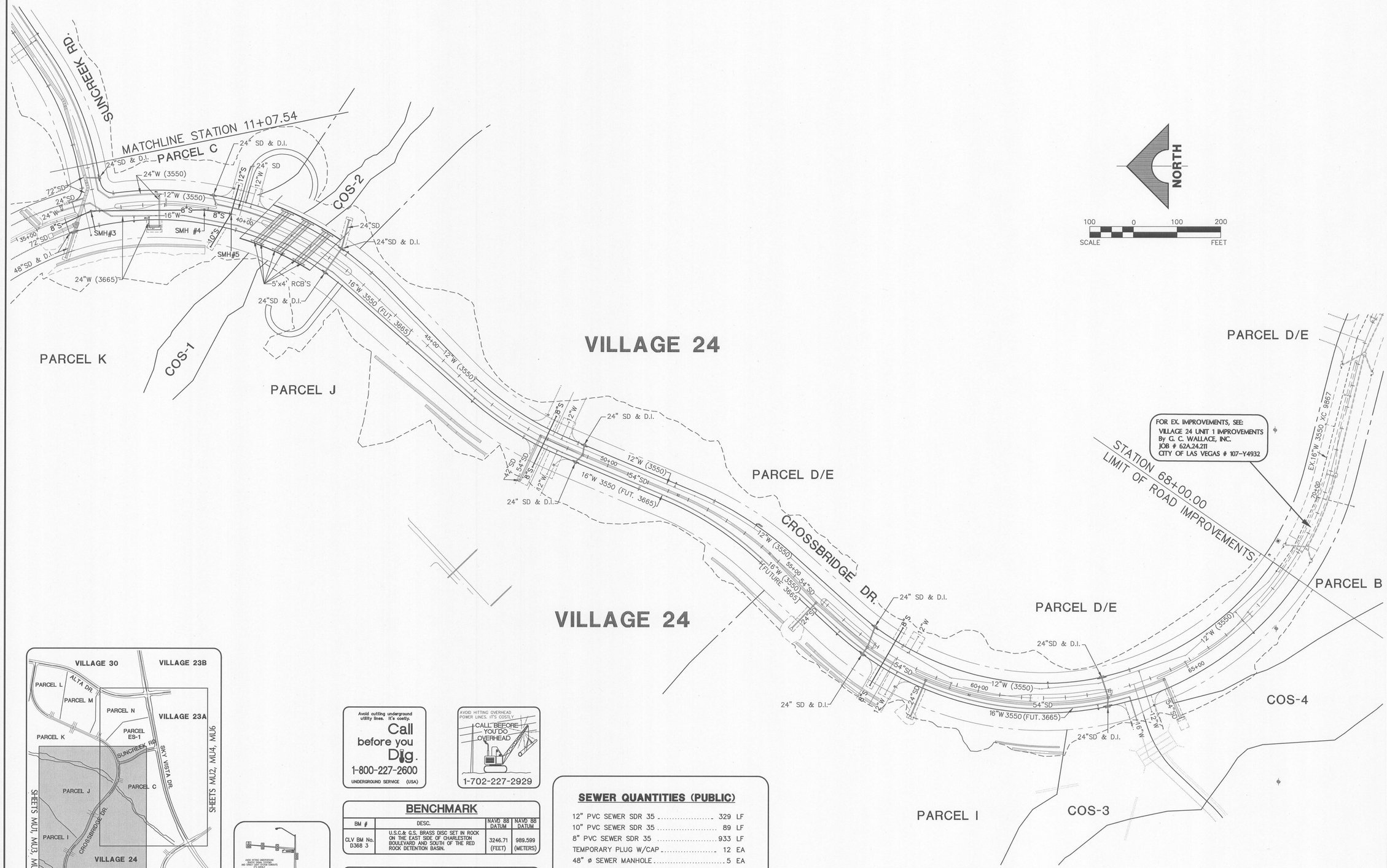

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UNDERGROUND SERVICE (USA)

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CALL BEFORE YOU DO OVERHEAD
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BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

Call before you UnderGround
1-702-455-7511
CLARK COUNTY WATER RECLAMATION
AND
1-702-229-6611
LAS VEGAS WELL CONFERENCED WATER SYSTEM

SEWER QUANTITIES (PUBLIC)

12" PVC SEWER SDR 35	329 LF
10" PVC SEWER SDR 35	89 LF
8" PVC SEWER SDR 35	933 LF
TEMPORARY PLUG W/CAP	12 EA
48" ø SEWER MANHOLE	5 EA

QUANTITIES ARE ESTIMATED ONLY. CONTRACTOR IS TO VERIFY DURING BIDDING PROCESS.

SANITARY SEWER MANHOLE SCHEDULE

MH #	TYPE	STREET NAME	STATION & OFFSET	INV IN	INV OUT	INV OUT	RIM
3	48" STANDARD	CROSSBRIDGE DRIVE	36+31.08, 2.87' LT	27.90 8"S (N)		27.70 8"S (S)	45.1±
4	48" STANDARD	CROSSBRIDGE DRIVE	38+92.00, 3.24' RT	25.11 8"S (N)		24.91 8"S (S)	42.7±
5	48" STANDARD	CROSSBRIDGE DRIVE	39+53.50, 0.0' RT.	24.30 8"S (N)	24.17 10"S (W)	23.97 12"S (E)	42.2±

PROFESSIONAL ENGINEER - STATE OF NEVADA
VICKI D. MARJERRISON
Exp. 12/31/2015
CIVIL
No. 13079
DATE: 5-14-14

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:42:17

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1555 S. RAINBOW BOULEVARD · LAS VEGAS, NV 89146
T: 702.804.2000 · F: 702.804.2299 · GCWALLACE.COM
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SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
SEWER MASTER PLAN 1

DRAWING
MU3
9 OF 82 SHTS

CLV DRAWING NO. XXXXX

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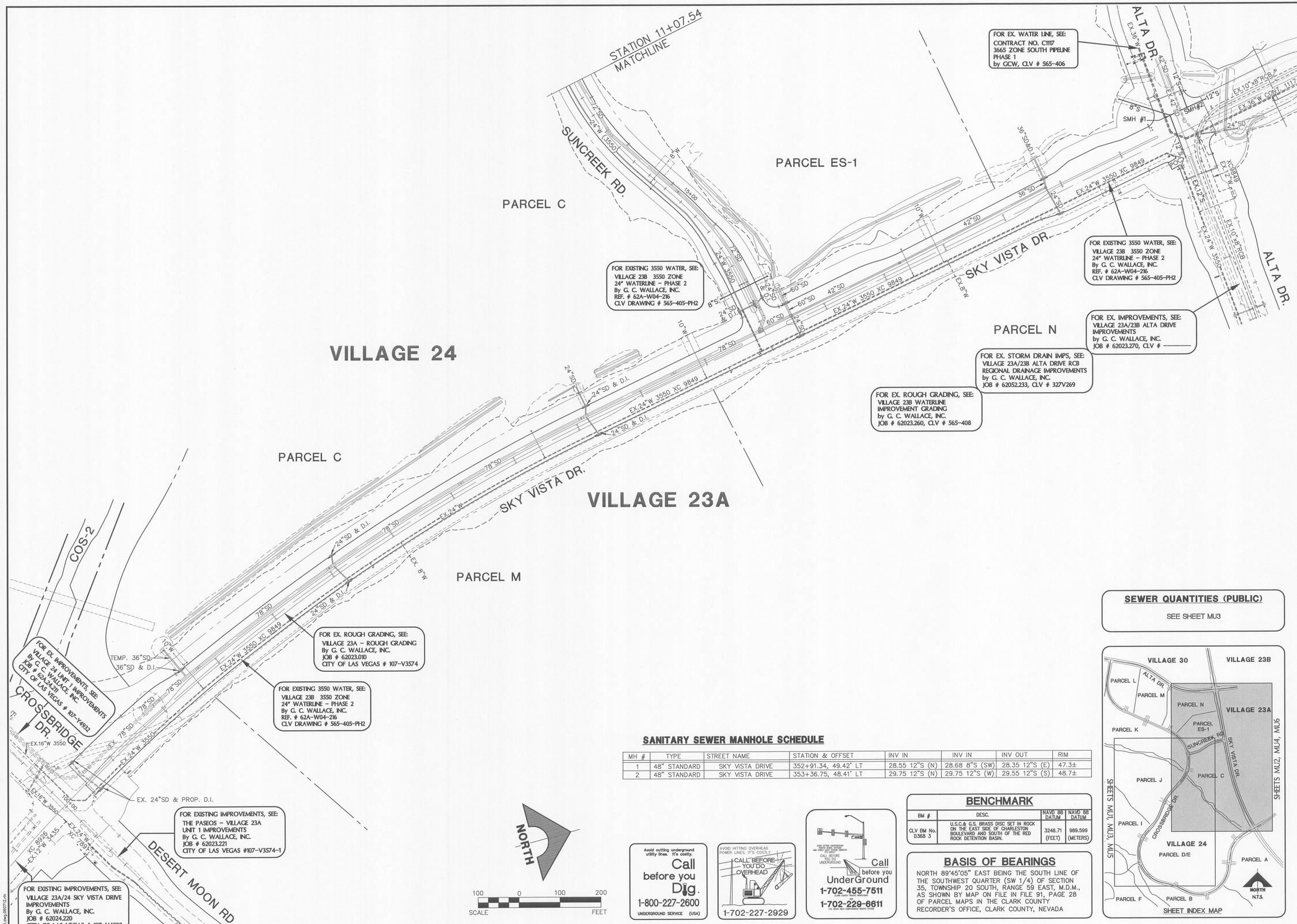

SANITARY SEWER MANHOLE SCHEDULE

MH #	TYPE	STREET NAME	STATION & OFFSET	INV IN	INV IN	INV OUT	RIM
1	48" STANDARD	SKY VISTA DRIVE	352+91.34, 49.42' LT	28.55 12"S (N)	28.68 8"S (SW)	28.35 12"S (E)	47.3±
2	48" STANDARD	SKY VISTA DRIVE	353+36.75, 48.41' LT	29.75 12"S (N)	29.75 12"S (W)	29.55 12"S (S)	48.7±

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Call before you UnderGround
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1-702-229-6611

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
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SEWER QUANTITIES (PUBLIC)

SEE SHEET MU3

SHEET INDEX MAP

CLV DRAWING NO. XXXXX

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

ENGINEER - STATE OF NEVADA
VICKI D. MARJERRISON
No. 13019
PROFESSIONAL ENGINEER
DATE: 5-14-14

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

PROJECT NO. 62A.24.212
DESIGN:
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SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
SEWER MASTER PLAN 2

DRAWING MU4
10 OF 82 SHTS

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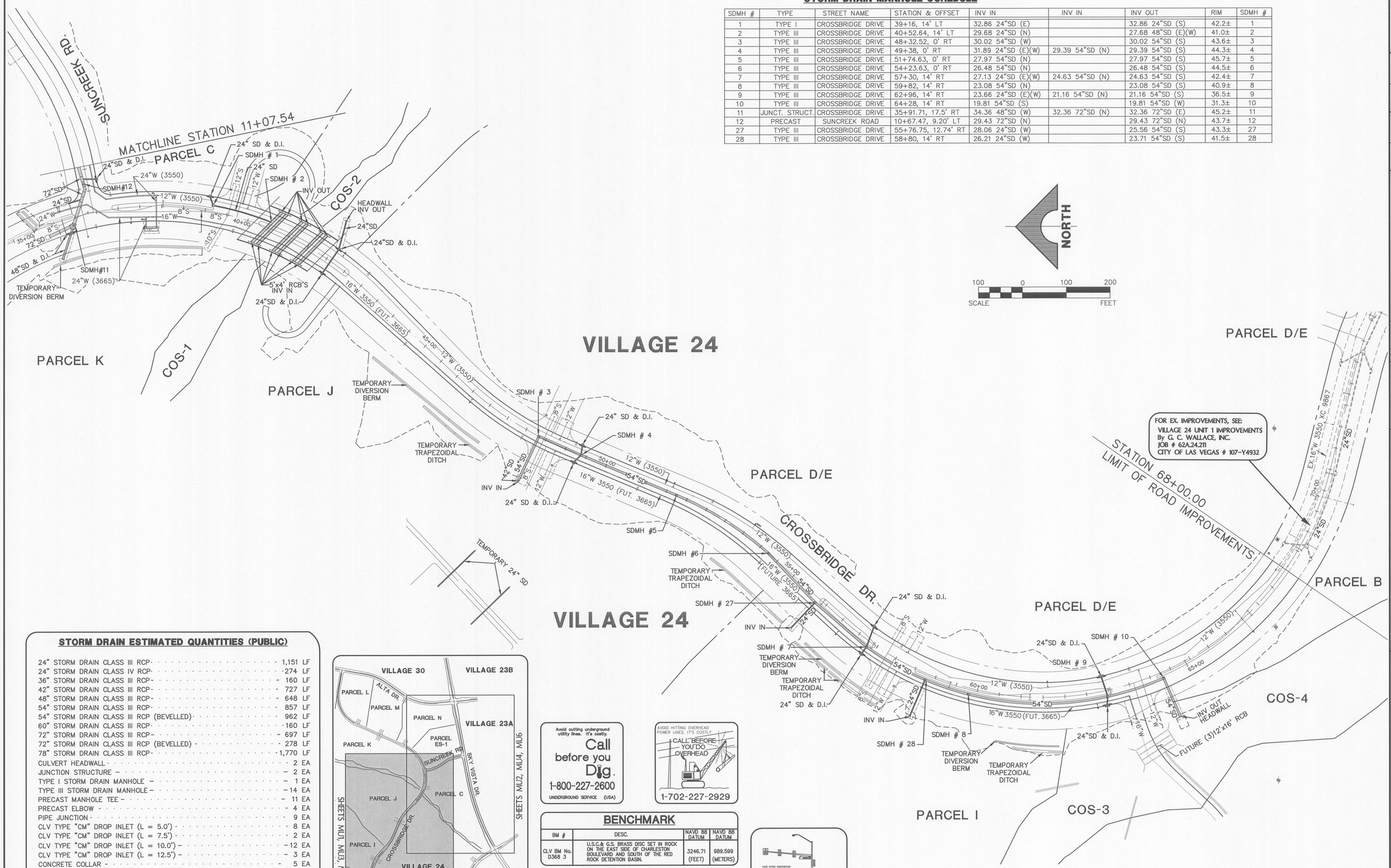
gcw2438.dwg,060712.chi

STORM DRAIN MANHOLE SCHEDULE

SDMH #	TYPE	STREET NAME	STATION & OFFSET	INV IN	INV IN	INV OUT	RIM	SDMH #
1	TYPE I	CROSSBRIDGE DRIVE	39+16, 14' LT	32.86 24"SD (E)		32.86 24"SD (S)	42.2±	1
2	TYPE III	CROSSBRIDGE DRIVE	40+52.64, 14' LT	29.68 24"SD (N)		27.68 48"SD (E)(W)	41.0±	2
3	TYPE III	CROSSBRIDGE DRIVE	48+32.52, 0' RT	30.02 54"SD (W)		30.02 54"SD (S)	43.6±	3
4	TYPE III	CROSSBRIDGE DRIVE	49+38, 0' RT	31.89 24"SD (E)(W)	29.39 54"SD (N)	29.39 54"SD (S)	44.3±	4
5	TYPE III	CROSSBRIDGE DRIVE	51+74.63, 0' RT	27.97 54"SD (N)		27.97 54"SD (S)	45.7±	5
6	TYPE III	CROSSBRIDGE DRIVE	54+23.63, 0' RT	26.48 54"SD (N)		26.48 54"SD (S)	44.5±	6
7	TYPE III	CROSSBRIDGE DRIVE	57+30, 14' RT	27.13 24"SD (E)(W)	24.63 54"SD (N)	24.63 54"SD (S)	42.4±	7
8	TYPE III	CROSSBRIDGE DRIVE	59+82, 14' RT	23.08 54"SD (N)		23.08 54"SD (S)	40.9±	8
9	TYPE III	CROSSBRIDGE DRIVE	62+96, 14' RT	23.66 24"SD (E)(W)	21.16 54"SD (N)	21.16 54"SD (S)	36.5±	9
10	TYPE III	CROSSBRIDGE DRIVE	64+28, 14' RT	19.81 54"SD (S)		19.81 54"SD (W)	31.3±	10
11	JUNCT. STRUCT.	CROSSBRIDGE DRIVE	35+91.71, 17.5' RT	34.36 48"SD (W)	32.36 72"SD (N)	32.36 72"SD (E)	45.2±	11
12	PRECAST	SUNCREEK ROAD	10+67.47, 9.20' LT	29.43 72"SD (N)		29.43 72"SD (S)	43.7±	12
27	TYPE III	CROSSBRIDGE DRIVE	55+76.75, 12.74' RT	28.06 24"SD (W)		25.56 54"SD (S)	43.3±	27
28	TYPE III	CROSSBRIDGE DRIVE	58+80, 14' RT	26.21 24"SD (W)		23.71 54"SD (S)	41.5±	28



NORTH

100 0 100 200

SCALE FEET

STORM DRAIN ESTIMATED QUANTITIES (PUBLIC)

24" STORM DRAIN CLASS III RCP	1,151 LF
24" STORM DRAIN CLASS IV RCP	274 LF
36" STORM DRAIN CLASS III RCP	160 LF
42" STORM DRAIN CLASS III RCP	727 LF
48" STORM DRAIN CLASS III RCP	648 LF
54" STORM DRAIN CLASS III RCP	857 LF
54" STORM DRAIN CLASS III RCP (BEVELLED)	962 LF
60" STORM DRAIN CLASS III RCP	160 LF
72" STORM DRAIN CLASS III RCP	697 LF
72" STORM DRAIN CLASS III RCP (BEVELLED)	278 LF
78" STORM DRAIN CLASS III RCP	1,770 LF
CULVERT HEADWALL	2 EA
JUNCTION STRUCTURE	2 EA
TYPE I STORM DRAIN MANHOLE	1 EA
TYPE III STORM DRAIN MANHOLE	14 EA
PRECAST MANHOLE TEE	11 EA
PRECAST ELBOW	4 EA
PIPE JUNCTION	9 EA
CLV TYPE "CM" DROP INLET (L = 5.0')	8 EA
CLV TYPE "CM" DROP INLET (L = 7.5')	2 EA
CLV TYPE "CM" DROP INLET (L = 10.0')	12 EA
CLV TYPE "CM" DROP INLET (L = 12.5')	3 EA
CONCRETE COLLAR	5 EA
ELASTOMERIC SEALANT	315 LF
TEMPORARY PLUG	2 EA
RIPRAP	6,124 CY

QUANTITIES ARE ESTIMATED ONLY. CONTRACTOR IS TO VERIFY DURING BIDDING PROCESS.

SHEET INDEX MAP

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BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

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TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

PROJECT NO. 62A.24.212

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VILLAGE 24 - UNIT 2 IMPROVEMENTS

STORM DRAIN MASTER PLAN 1

DRAWING MU5

11 OF 82 SHTS

CLV DRAWING NO. XXXXX

emarjerrison

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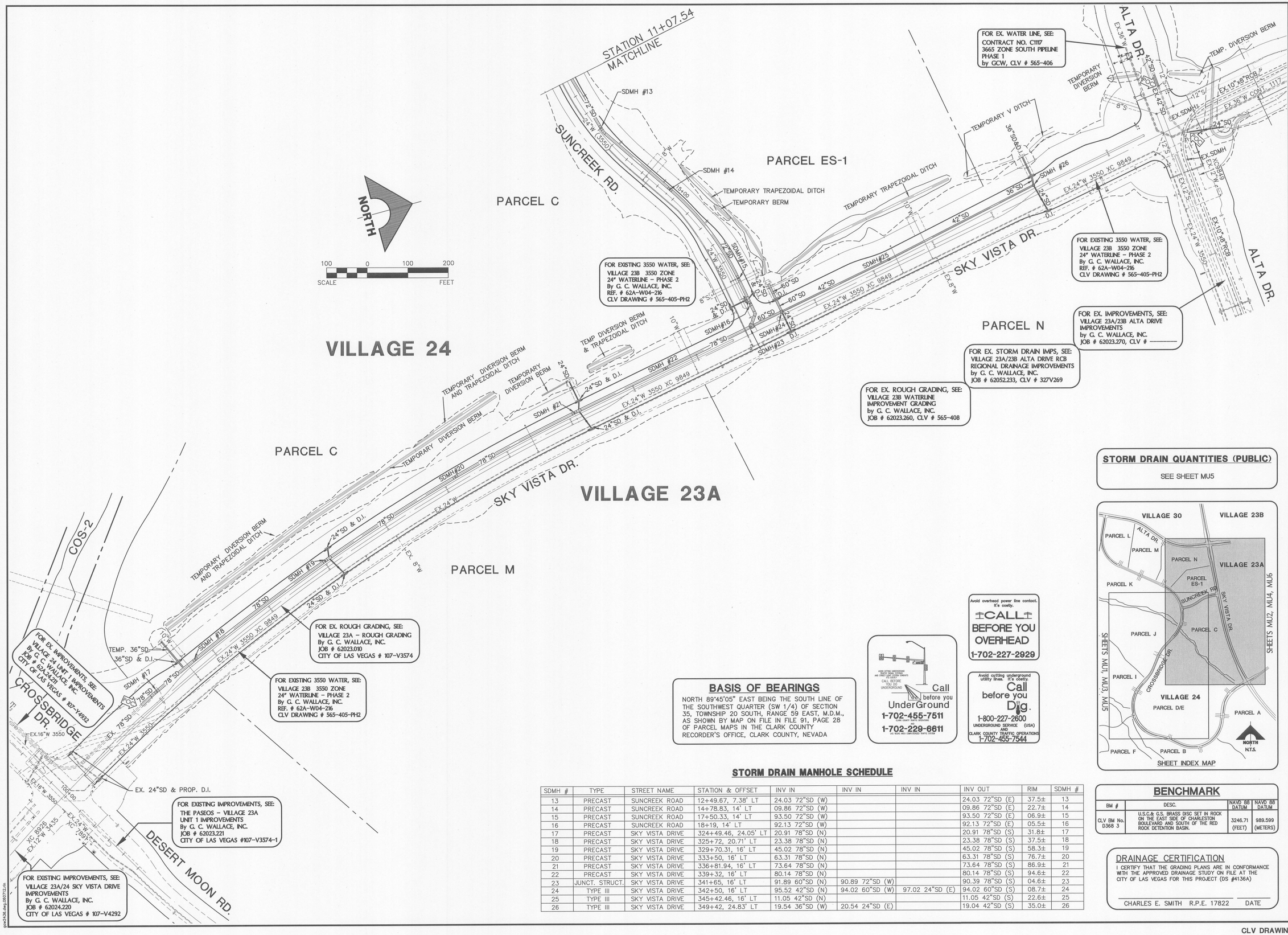

FOR EX. WATER LINE, SEE:
CONTRACT NO. C1117
3665 ZONE SOUTH PIPELINE
PHASE 1
by GCW, CLV # 565-406

FOR EXISTING 3550 WATER, SEE:
VILLAGE 23B 3550 ZONE
24" WATERLINE – PHASE 2
By G. C. WALLACE, INC.
REF. # 62A-W04-216
CLV DRAWING # 565-405-PH2

FOR EXISTING 3550 WATER, SEE:
VILLAGE 23B 3550 ZONE
24" WATERLINE – PHASE 2
By G. C. WALLACE, INC.
REF. # 62A-W04-216
CLV DRAWING # 565-405-PH2

FOR EX. IMPROVEMENTS, SEE:
VILLAGE 23A/23B ALTA DRIVE
IMPROVEMENTS
by G. C. WALLACE, INC.
JOB # 62023.270, CLV # ———

FOR EX. STORM DRAIN IMPS, SEE:
VILLAGE 23A/23B ALTA DRIVE RCB
REGIONAL DRAINAGE IMPROVEMENTS
by G. C. WALLACE, INC.
JOB # 62052.233, CLV # 327V269

FOR EX. ROUGH GRADING, SEE:
VILLAGE 23B WATERLINE
IMPROVEMENT GRADING
by G. C. WALLACE, INC.
JOB # 62023.260, CLV # 565-408

FOR EX. ROUGH GRADING, SEE:
VILLAGE 23A – ROUGH GRADING
By G. C. WALLACE, INC.
JOB # 62023.010
CITY OF LAS VEGAS # 107-V3574

FOR EX. IMPROVEMENTS, SEE:
VILLAGE 24 UNIT 1 IMPROVEMENTS
By G. C. WALLACE, INC.
JOB # 62A.24.221
CITY OF LAS VEGAS # 107-V4932

FOR EXISTING IMPROVEMENTS, SEE:
THE PASEOS – VILLAGE 23A
UNIT 1 IMPROVEMENTS
By G. C. WALLACE, INC.
JOB # 62023.221
CITY OF LAS VEGAS #107-V3574-1

FOR EXISTING IMPROVEMENTS, SEE:
VILLAGE 23A/24 SKY VISTA DRIVE
IMPROVEMENTS
By G. C. WALLACE, INC.
JOB # 62024.220
CITY OF LAS VEGAS # 107-V4292

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

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UNDERGROUND SERVICE (USA) AND CLARK COUNTY TRAFFIC OPERATIONS
1-702-455-7544

STORM DRAIN MANHOLE SCHEDULE

SDMH #	TYPE	STREET NAME	STATION & OFFSET	INV IN	INV IN	INV IN	INV OUT	RIM	SDMH #
13	PRECAST	SUNCREEK ROAD	12+49.67, 7.38' LT	24.03 72"SD (W)			24.03 72"SD (E)	37.5±	13
14	PRECAST	SUNCREEK ROAD	14+78.83, 14' LT	09.86 72"SD (W)			09.86 72"SD (E)	22.7±	14
15	PRECAST	SUNCREEK ROAD	17+50.33, 14' LT	93.50 72"SD (W)			93.50 72"SD (E)	06.9±	15
16	PRECAST	SUNCREEK ROAD	18+19, 14' LT	92.13 72"SD (W)			92.13 72"SD (E)	05.5±	16
17	PRECAST	SKY VISTA DRIVE	324+49.46, 24.05' LT	20.91 78"SD (N)			20.91 78"SD (S)	31.8±	17
18	PRECAST	SKY VISTA DRIVE	325+72, 20.71' LT	23.38 78"SD (N)			23.38 78"SD (S)	37.5±	18
19	PRECAST	SKY VISTA DRIVE	329+70.31, 16' LT	45.02 78"SD (N)			45.02 78"SD (S)	58.3±	19
20	PRECAST	SKY VISTA DRIVE	333+50, 16' LT	63.31 78"SD (N)			63.31 78"SD (S)	76.7±	20
21	PRECAST	SKY VISTA DRIVE	336+81.94, 16' LT	73.64 78"SD (N)			73.64 78"SD (S)	86.9±	21
22	PRECAST	SKY VISTA DRIVE	339+32, 16' LT	80.14 78"SD (N)			80.14 78"SD (S)	94.6±	22
23	JUNCT. STRUCT.	SKY VISTA DRIVE	341+65, 16' LT	91.89 60"SD (N)	90.89 72"SD (W)		90.39 78"SD (S)	04.6±	23
24	TYPE III	SKY VISTA DRIVE	342+50, 16' LT	95.52 42"SD (N)	94.02 60"SD (W)	97.02 24"SD (E)	94.02 60"SD (S)	08.7±	24
25	TYPE III	SKY VISTA DRIVE	345+42.46, 16' LT	11.05 42"SD (N)			11.05 42"SD (S)	22.6±	25
26	TYPE III	SKY VISTA DRIVE	349+42, 24.83' LT	19.54 36"SD (W)	20.54 24"SD (E)		19.04 42"SD (S)	35.0±	26

STORM DRAIN QUANTITIES (PUBLIC)

SEE SHEET MU5

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

DRAINAGE CERTIFICATION

I CERTIFY THAT THE GRADING PLANS ARE IN CONFORMANCE WITH THE APPROVED DRAINAGE STUDY ON FILE AT THE CITY OF LAS VEGAS FOR THIS PROJECT (DS #4136A)

CHARLES E. SMITH R.P.E. 17822 DATE

STATE OF NEVADA — VICKI D. MARJERRISON — No. 13509 — PROFESSIONAL ENGINEER — CIVIL — DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
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PLOT DATE: 05-14-14
PLOT TIME: 13:42:48

G.C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
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SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

STORM DRAIN MASTER PLAN 2

DRAWING MU6
12 OF 82 SHTS

CLV DRAWING NO. XXXXX

emar jerrison

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gcw2426.dwg,082712.ctb

VILLAGE 24
PARCEL ES-1
APN 137-22-000-015

ES-1

LIMIT OF ROUGH GRADING

35+95.43, 33.50' LT
ECR, 45.22 TC
END ROUGH GRADE
BEGIN IMPROVEMENTS

35+69, 08.33' LT
45.01 TC
END ROUGH GRADE
BEGIN IMPROVEMENTS

35+69, 03.68' LT
45.25 TC
END ROUGH GRADE
BEGIN IMPROVEMENTS

TEMPORARY DIVERSION BERM & DITCH
SEE SHEET G6

35+95.18, 8.33' LT
PC, 45.76 TC

35+95.18, 3.67' LT
PC, 46.00 TC

35+69.00, 33.50' RT
45.47 TC
END ROUGH GRADE
BEGIN IMPROVEMENTS

24"SD
72"SD
48"SD

36+43.14
CROSSBRIDGE DR.

10+00.00
SUNCREEK RD.

TEMPORARY DIVERSION BERM
SEE SHEET G6 & U1

LIMIT OF ROUGH GRADING

VILLAGE 24
PARCEL K
APN 137-22-000-015

LIMIT OF ROUGH GRADING

VILLAGE 24
PARCEL C
APN 137-22-000-015

36+90.85, 33.50' LT
BCR, 44.32 TC

36+91.11, 8.33' LT
PC, 44.86 TC

36+89.47, 1.39' RT
PC, 45.02 TC

37+30.63, 8.33' RT
PCC, 44.49 TC

37+64.82, 3.60' RT
PRC, 44.26 TC

38+16.82, 3.67' LT
PCC, 43.92 TC

67.00'ROW

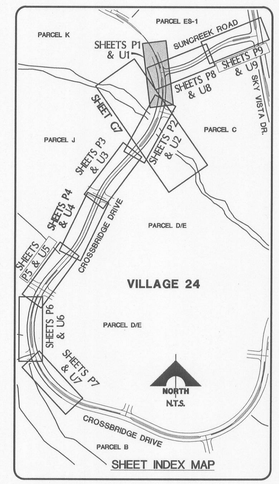
24.00' LS

40.00' LS

MATCHLINE STATION 39+00 SEE SHEET P2

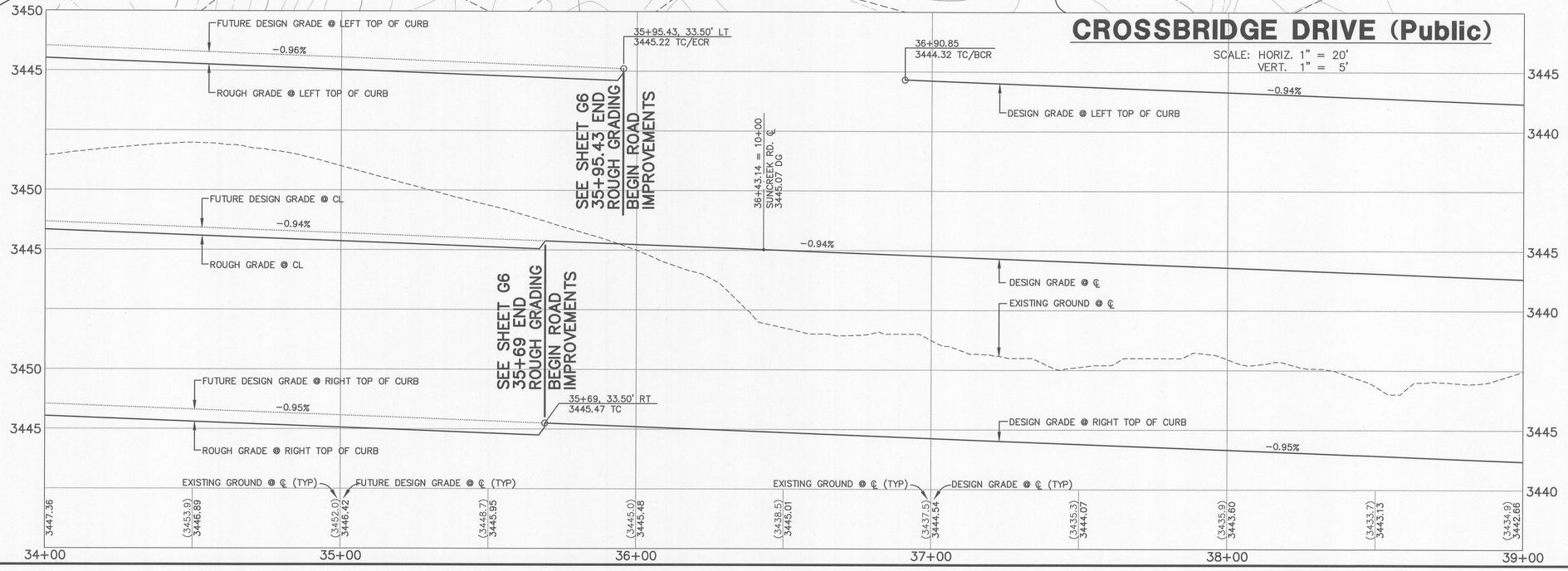
NORTH

SCALE 20 0 20 40 FEET



CROSSBRIDGE DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'



NOTE

THIS SET OF DRAWINGS IS BASED UPON NAVD 88 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
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CLARK COUNTY TRAFFIC OPERATIONS AND
1-702-229-6611
LAS VEGAS AREA COMPUTERIZED TRAFFIC SYSTEM

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SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

CROSSBRIDGE DRIVE
ROADWAY PLAN AND PROFILE 1

DRAWING
P1
13 OF 82 SHTS

CLV DRAWING NO. XXXXX

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:43:18

REV	DATE	DESCRIPTION	DATE AGEN APP	DATE GOW APP

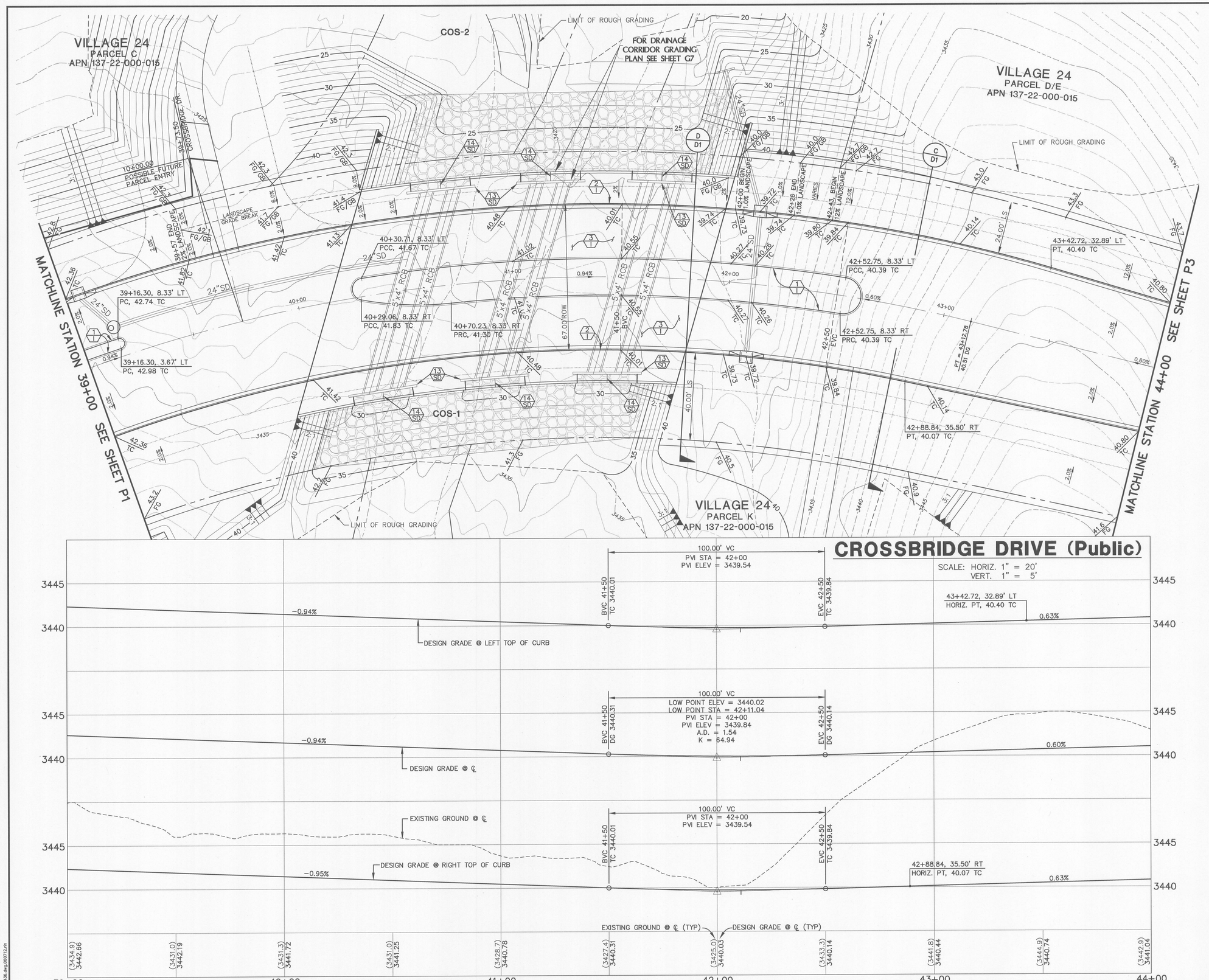
DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

emar jamison

F:\Projects\60D\62024-22\1\DWG\Production\Unit2 TDS Plans\24U2cP01-13.dwg

gcw2436.dwg,080712.in



NOTE

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BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM NO. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

Avoid hitting underground traffic signal system and streetlight system conduits. It's costly.
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1-702-455-7511 CLARK COUNTY TRAFFIC OPERATIONS AND
1-702-229-6611 LAS VEGAS AREA COMPUTERIZED TRAFFIC SYSTEM

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1-800-227-2600 UNDERGROUND SERVICE (USA)

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SUMMERLIN

VILLAGE 24 – UNIT 2 IMPROVEMENTS

CROSSBRIDGE DRIVE
ROADWAY PLAN AND PROFILE 2

DRAWING
P2
14 OF 82 SHTS

CLV DRAWING NO. XXXXX

PROJECT NO.
62A.24212

DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:43:46

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

TDS SUBMITTAL 5-14-2014 – NOT FOR CONSTRUCTION

DATE: 5-14-14

emorjensen

F:\Projects\600\62024-221\DWG\Production\Unit2 TDS Plans\24U2sP02-14.dwg

pw2A36.dwg,060712.dv

VILLAGE 24
PARCEL D/E
APN 137-22-000-015

VILLAGE 24
PARCEL J
APN 137-22-000-015

LIMIT OF ROUGH GRADING

MATCHLINE STATION 44+00 SEE SHEET P2

MATCHLINE STATION 49+00 SEE SHEET P4

B
D1

10+00.00
POSSIBLE FUTURE
PARCEL ENTRY

48+57.52
CROSSBRIDGE DR.

45+94.49, 22.61' LT
PC, 42.12 TC
BEGIN LS TRANS.
FROM 12% TO 15%

48+00, 22' LT
43.37 TC
END LS TRANS.
FROM 15% TO 12%

48+92.42, 22.00' LT
PT, 43.92 TC

48+92.42, 22' RT
PT, 43.92 TC

46+49.85, 22.00' RT
PC, 42.47 TC

47+30
22' RT
42.95 TC

47+50
22' RT
43.07 TC

48+20
22' RT
43.49 TC

48+40
22' RT
43.61 TC

47+30
62' RT
43.8 FG

47+50
62' RT
44.3 FG

48+20
62' RT
44.7 FG

48+40
22' RT
44.4 FG

BEGIN LANDSCAPE TRANSITION FROM 2.0% TO 3.0%

END LANDSCAPE TRANSITION FROM 2.0% TO 3.0%

BEGIN LANDSCAPE TRANSITION FROM 3.0% TO 2.0%

END LANDSCAPE TRANSITION FROM 3.0% TO 2.0%

40' GRADING TRANSITION
FROM 3:1 TO 4:1
STATION 48+40 TO 48+80

24.00' LS

40.00' LS

44.00' ROW

54" SD

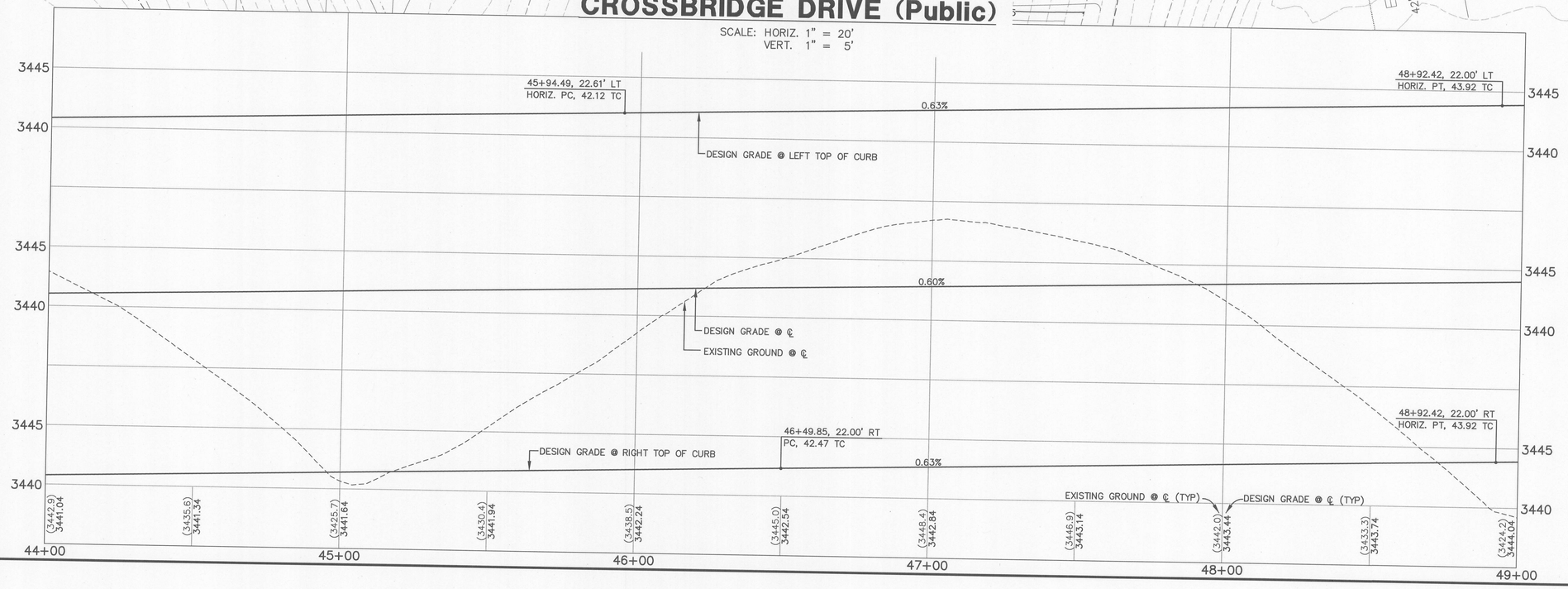
42" SD

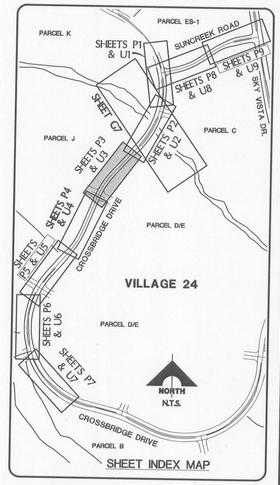
NORTH

SCALE 20 0 20 40 FEET

CROSSBRIDGE DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'





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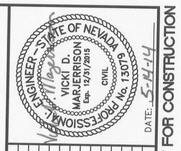
CLV DRAWING NO. XXXXX



REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

PROJECT NO. 62A24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:44:15

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

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SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

CROSSBRIDGE DRIVE
ROADWAY PLAN AND PROFILE 3

DRAWING
P3
15 OF 82 SHTS

gca24.26.dwg,060712.rin

F:\Projects\60\62024-221\DWG\Production\Unit2 TDS Plans\24U2sPO3-15.dwg emarjerrison

VILLAGE 24
PARCEL D/E
APN 137-22-000-015

MATCHLINE STATION 49+00 SEE SHEET P3

MATCHLINE STATION 54+00 SEE SHEET P5

LIMIT OF ROUGH GRADING

52+09.21, 22.82' LT
PC, 45.60 TC

51+51.62, 22.00' RT
PC, 45.48 TC

54"SD (BEVELLED PIPE)

54"SD

24"SD

44.00' ROW

24.00' LS

40.00' LS

51+00 BEGIN LANDSCAPE TRANSITION FROM 12.0% TO 2.0%

51+50 END LANDSCAPE TRANSITION FROM 12.0% TO 2.0%

51+50 BVC

52+50 EVC

PC= 51+74.6
45.65 DG

STATION 52+00
END 4:1 GRADING
BEGIN 3:1 GRADING

VILLAGE 24
PARCEL J
APN 137-22-000-015

LIMIT OF ROUGH GRADING

LIMIT OF ROUGH GRADING

CROSSBRIDGE DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

BVC 51+50
TC 3445.47

100.00' VC
PVI STA = 52+00
PVI ELEV = 3445.76

EVC 52+50
TC 3445.41

52+09.21, 22.82' LT
HORIZ. PC, 45.60 TC

DESIGN GRADE @ LEFT TOP OF CURB

100.00' VC
HIGH POINT ELEV = 3445.69
HIGH POINT STA = 52+00
PVI STA = 52+00
PVI ELEV = 3445.84
A.D. = -1.20
K = 83.33

BVC 51+50
DG 3445.54

EVC 52+50
DG 3445.54

DESIGN GRADE @ ℄

EXISTING GROUND @ ℄

100.00' VC
PVI STA = 52+00
PVI ELEV = 3445.75

BVC 51+50
TC 3445.47

EVC 52+50
TC 3445.42

DESIGN GRADE @ RIGHT TOP OF CURB

51+51.62, 22.00' RT
PC, 45.48 TC

EXISTING GROUND @ ℄ (TYP)

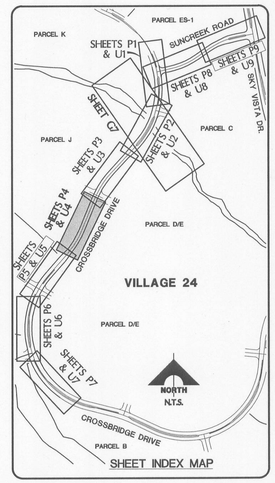
DESIGN GRADE @ ℄ (TYP)

(3424.2) 3444.04	(3423.3) 3444.34	(3424.5) 3444.64	(3423.0) 3444.94	(3425.0) 3445.24	(3436.5) 3445.54	(3439.6) 3445.69	(3437.7) 3445.54	(3441.3) 3445.24	(3435.6) 3444.94	(3436.8) 3444.64

49+00 50+00 51+00 52+00 53+00 54+00

NORTH

SCALE 20 0 20 40 FEET



SHEET INDEX MAP

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ENGINEER - STATE OF NEVADA
VICKI B. MAR JERRISON
No. 13078
PROFESSIONAL ENGINEER
Exp. 12/31/2015
CIVIL
DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

PROJECT NO. 62A.24.212

DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:44:44

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SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

CROSSBRIDGE DRIVE
ROADWAY PLAN AND PROFILE 4

DRAWING
P4
16 OF 82 SHTS

CLV DRAWING NO. XXXXX

emcr jenkson

F:\Projects\600\62024-221\DWG\Production\Unit2 TDS Plans\24U2eP04-16.dwg

cpw2438.dwg 080712.ctb

VILLAGE 24
PARCEL D/E
APN 137-22-000-015

LIMIT OF ROUGH GRADING

MATCHLINE STATION 54+00 SEE SHEET P4

MATCHLINE STATION 59+00 SEE SHEET P6

54+56.65, 33.50' LT
PT, 44.00 TC

54"SD
0.60%
BEVELLED PIPE
PT = 54+23.63
44.49 06

54+13.27, 29.53' RT
PT, 44.34 TC

55+89.86, 8.33' LT
PT, 43.74 TC

55+89.86, 7.28' RT
PC, 43.77 TC

56+60.15, 33.50' LT
PC, 42.78 TC

PC= 56+60.15
43.07 06

56+49.07
8.24' RT
43.38 TC
PC

56+48.66, 33.41' RT
PC, 42.85 TC

57+00.90
8.33' LT
43.07 TC
PCC

57+41.95, 1.39' LT
PC, 42.96 TC

57+40.30, 8.33' RT
PC, 42.84 TC

58+54.39, 3.67' RT
PCC, 42.39 TC

54"SD (BEVELLED PIPE)
PCC, 42.15 TC

24"SD

67.00' ROW

24.00' LS

40.00' LS

10+00.00
POSSIBLE FUTURE
PARCEL ENTRY E & I

57+97.34
CROSSBRIDGE DR.

VILLAGE 24
PARCEL J
APN 137-22-000-015

LIMIT OF ROUGH GRADING

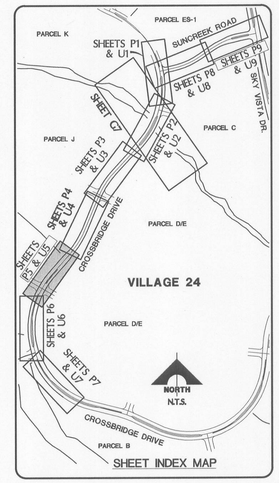
VILLAGE 24
PARCEL I
APN 137-22-000-015

LIMIT OF ROUGH GRADING

3:1

NORTH

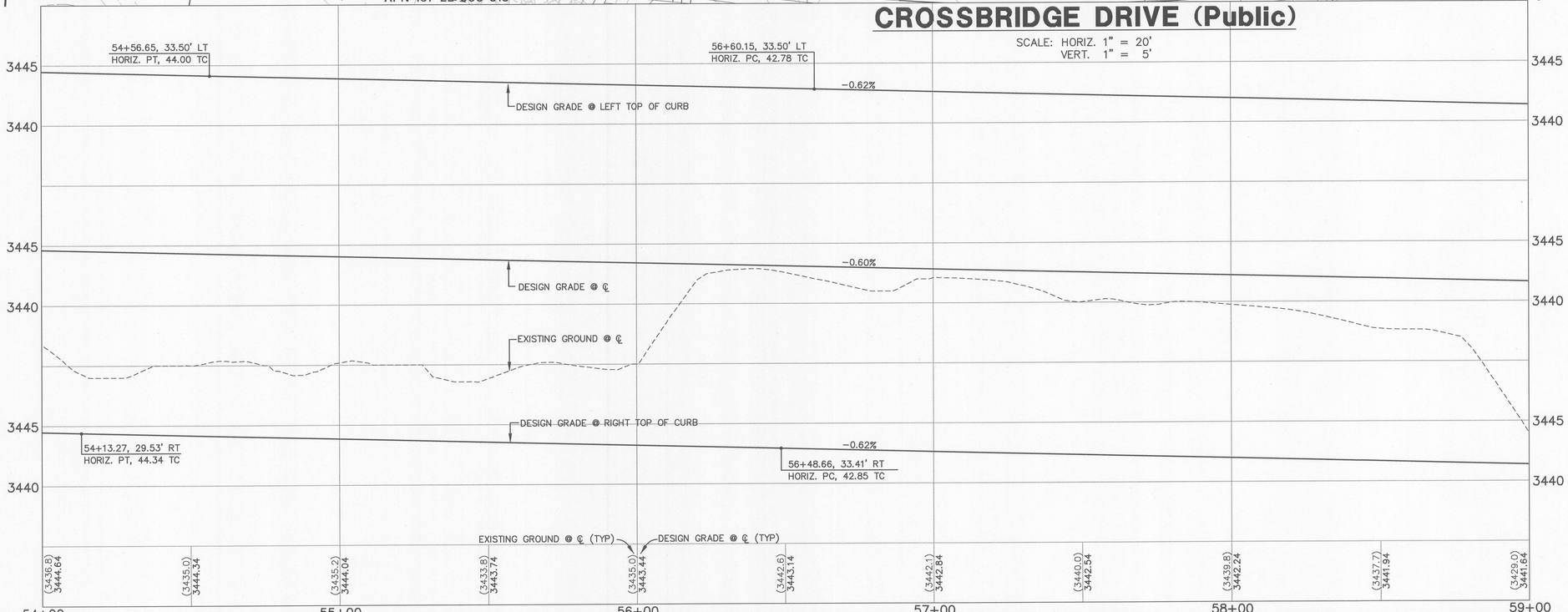
SCALE 20 0 20 40 FEET



SHEET INDEX MAP

CROSSBRIDGE DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'



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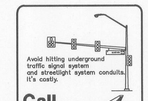



VICKI D. MARJERRISON
Exp. 12/31/2015
CIVIL
No. 13079
PROFESSIONAL ENGINEER - STATE OF NEVADA
DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:45:13

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SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
CROSSBRIDGE DRIVE
ROADWAY PLAN AND PROFILE 5

DRAWING
P5
17 OF 82 SHTS

CLV DRAWING NO. XXXXX

emorjerrison
F:\Projects\600\62024-221\DWG\Production\Unit2 TDS Plans\24x22x05-17.dwg
gcw2436.dwg,060713.rin

MATCHLINE STATION 59+00 SEE SHEET P5

MATCHLINE STATION 64+00 SEE SHEET P7

VILLAGE 24
PARCEL D/E
APN 137-22-000-015

VILLAGE 24
PARCEL I
APN 137-22-000-015

LIMIT OF ROUGH GRADING

60+03.58, 3.67' RT
PCC, 41.50 TC

60+99.53, 4.98' LT
PRC, 40.75 TC

61+37.00, 8.33' LT
PRC, 40.37 TC

61+81.06, 33.50' LT
PCC, 39.23 TC

62+63.55, 8.33' LT
PRC, 37.98 TC

63+04.60, 1.39' LT
PCC, 36.89 TC

63+02.95, 8.33' RT
PCC, 36.82 TC

63+51.76, 34.22' RT
PRC, 34.54 TC

63+92.53, 36.00' RT
PCC, 32.84 TC

63+35.15, 35.50' RT
PRC, 35.18 TC

63+03.26, 33.50

54"SD (BEVELLED PIPE)

24"SD

67.00'ROW

24.00' LS

40.00' LS

CROSSBRIDGE DRIVE

10+00.00 FUTURE PARCEL ENTRY 0.60%

COS-3

3:1

2.0%

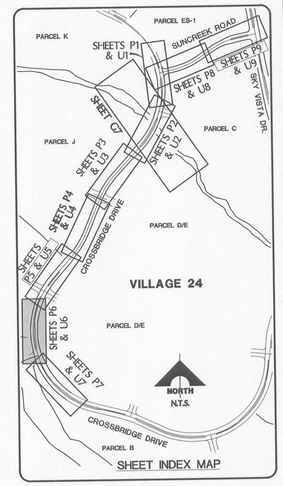
0.60%

61+00 B/C

63+00

NORTH

SCALE 20 0 20 40 FEET



SHEET INDEX MAP

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CLARK COUNTY TRAFFIC OPERATIONS AND
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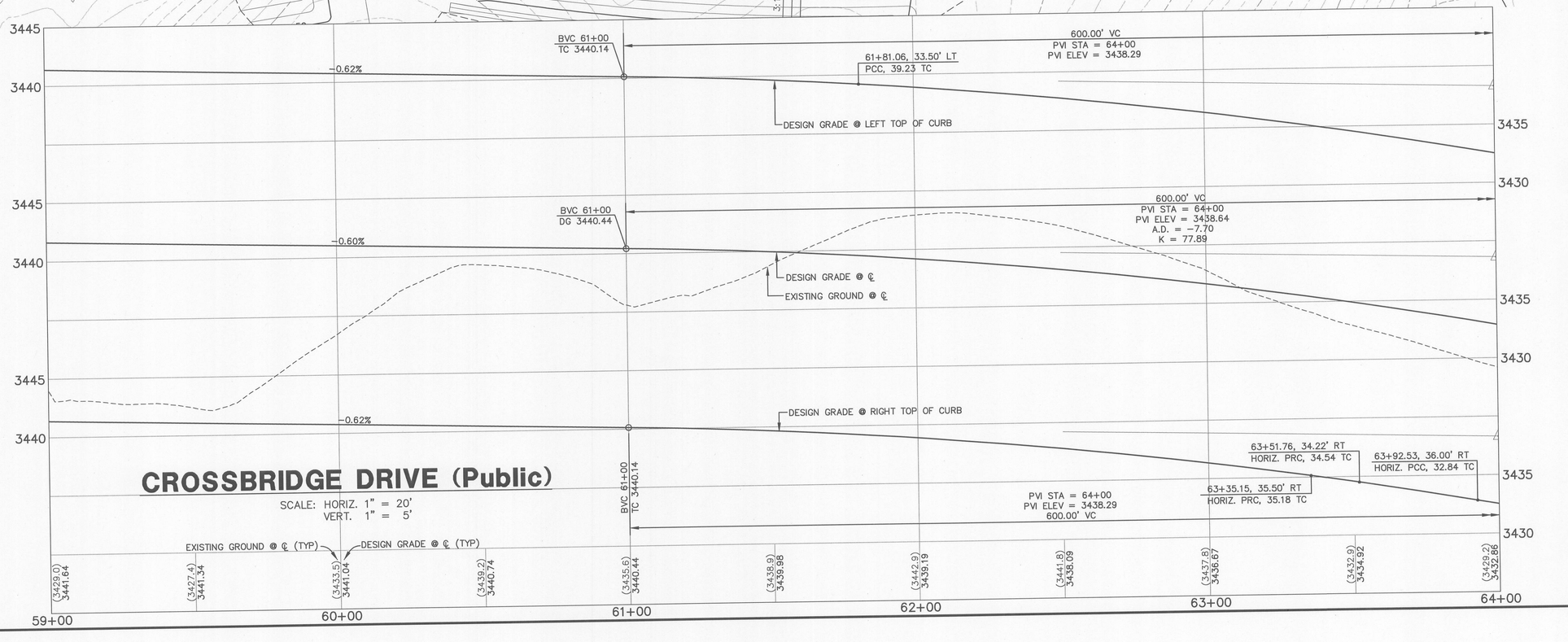

CROSSBRIDGE DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

G.C. WALLACE COMPANIES
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SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

CROSSBRIDGE DRIVE
ROADWAY PLAN AND PROFILE 6

DRAWING P6
18 OF 82 SHTS

CLV DRAWING NO. XXXXX

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:45:42

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

DATE: 5-14-14

emorjerison

F:\Projects\600\62A24 - 221\GWC\Production\Unit2 TDS Plans\24U2-P06-18.dwg

gcw2438.dwg,080712.rin

VILLAGE 24
PARCEL D/E
APN 137-22-000-015

VILLAGE 24
PARCEL B
APN 137-22-000-014

MATCHLINE STATION 64+00
SEE SHEET P6

64+01.56, 35.84' LT
PT, 32.44 TC

64+16.54, 36.00' LT
PC, 31.76 TC

64+16.54, 3.67' RT
PRC, 32.59 TC

64+16.54, 8.33' RT
PRC, 32.35 TC

65+65.73, 3.67' RT
PCC, 24.20 TC

66+61.68, 4.98' LT
PRC, 17.13 TC

66+99.16, 8.33' LT
PRC, 14.04 TC

54"SD (BEVELLED PIPE)

54"SD

72.00'ROW

LIMIT OF ROUGH GRADING

COMMON LOT

FUTURE SIDEWALK BY OTHERS

COS-3

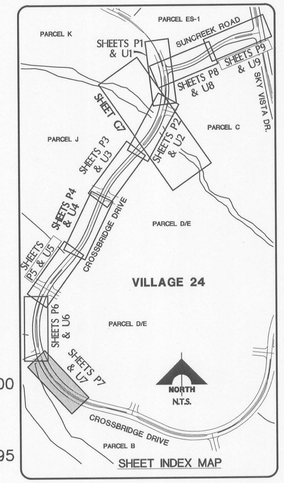
COS-4

EX. CALICO POWER POLE

68+00 LIMIT OF ROAD IMPROVEMENTS MATCH EXISTING

NORTH

SCALE 20 0 20 40 FEET



SHEET INDEX MAP

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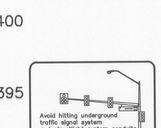



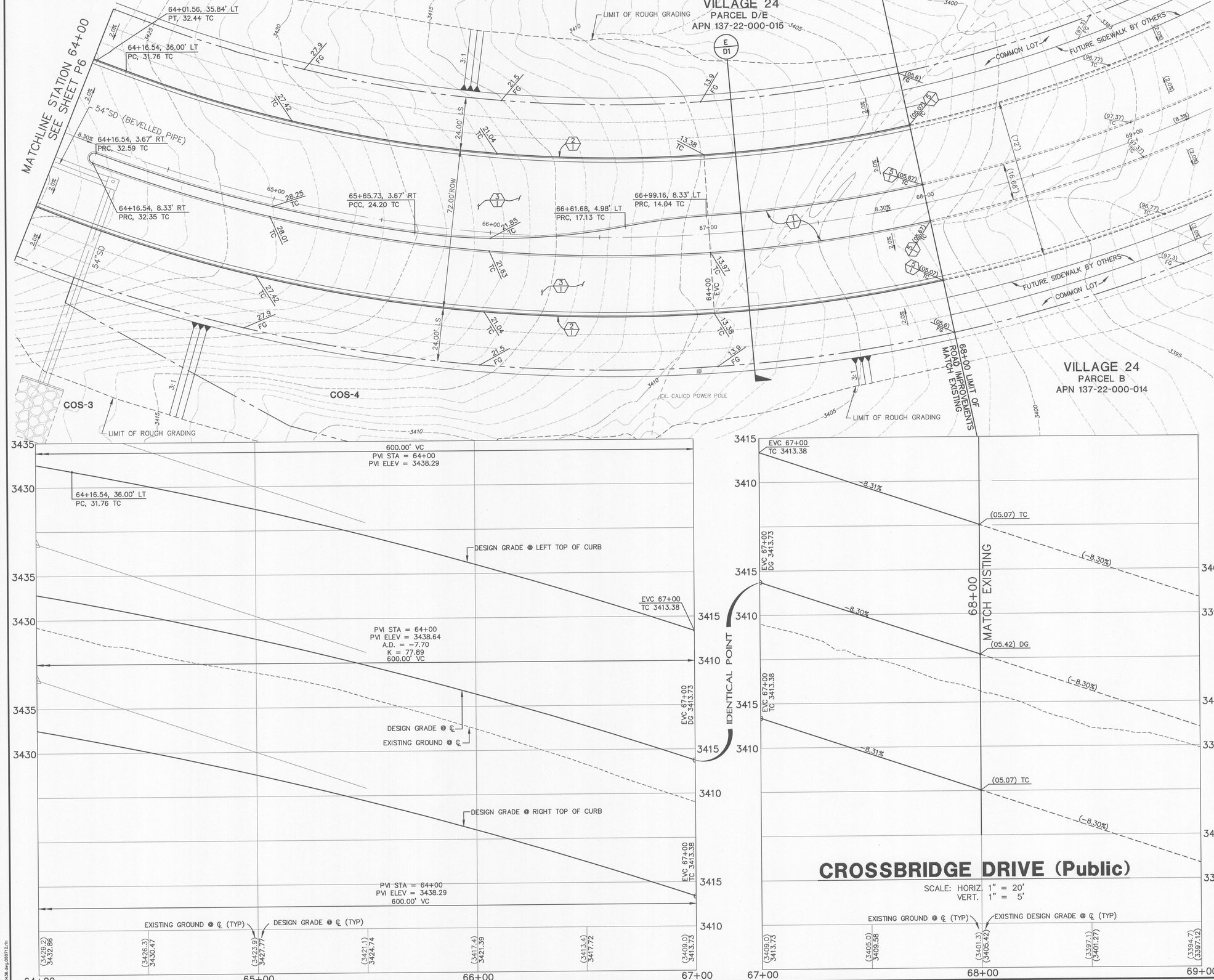

CROSSBRIDGE DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

ENGINEER - STATE OF NEVADA
VICKI D. MARJERRISON
No. 13019
PROFESSIONAL ENGINEER
DATE: 5-14-14

REV	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:46:14

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1555 S. RAINBOW BOULEVARD - LAS VEGAS, NV 89146
T: 702.804.2000 - F: 702.804.2299 - GCWALLACE.COM
LAS VEGAS - SACRAMENTO - RENO

SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

CROSSBRIDGE DRIVE
ROADWAY PLAN AND PROFILE 7

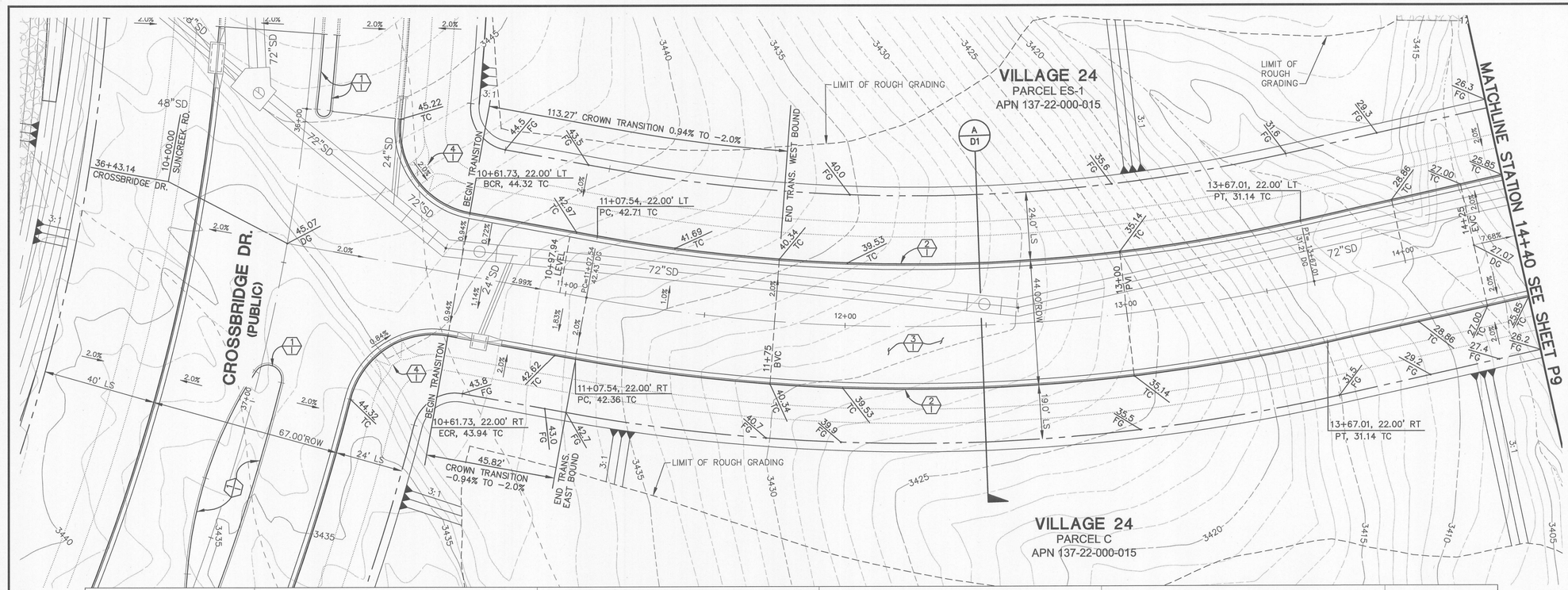
DRAWING P7
19 OF 82 SHTS

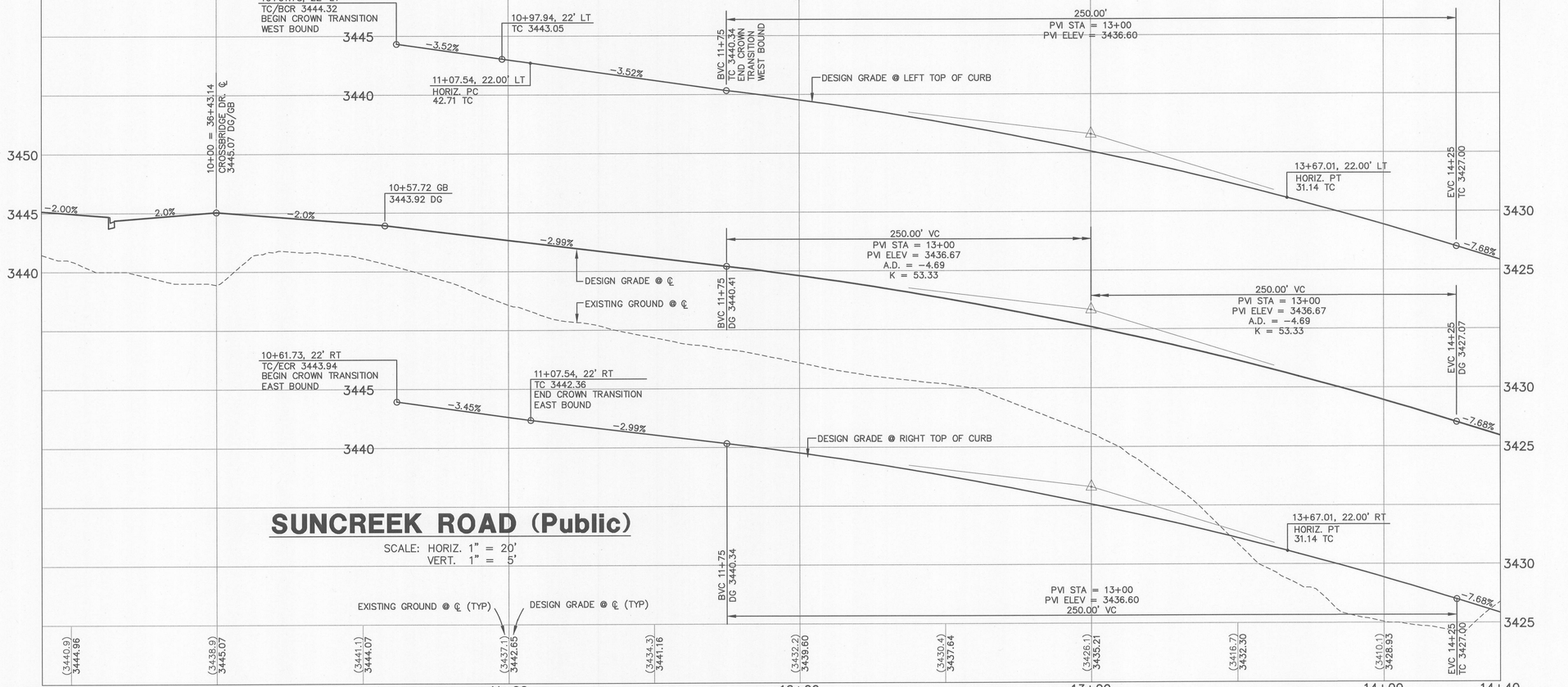
CLV DRAWING NO. XXXXX

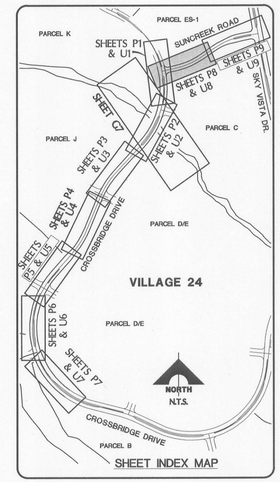
gcw2436.dwg 060712.ctb

F:\Projects\600\62024-221\DWG\Production\Unit2 TDS Plans\24U2sP07-19.dwg

emarjerrison







NOTE

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BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM NO. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

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CLARK COUNTY TRAFFIC OPERATIONS
AND
1-702-229-6611
LAS VEGAS AREA COMPUTERIZED TRAFFIC SYSTEM

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

Avoid cutting underground utility lines. It's costly.
Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE (USA)

ENGINEER - STATE OF NEVADA
VICKI D. MARJERRISON
No. 13078
PROFESSIONAL
CIVIL
Exp. 12/31/2015
DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:46:42

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LAS VEGAS · SACRAMENTO · RENO

SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

SUNCREEK ROAD
ROADWAY PLAN AND PROFILE 1

DRAWING P8
20 OF 82 SHTS

CLV DRAWING NO. XXXXX

F:\Projects\600\62024-221\DWG\Production\Unit2 TDS Plans\24U2sP08-20.dwg emorjerrison

cse2436.dwg 080712-rlm

VILLAGE 24
PARCEL ES-1
APN 137-22-000-015

LIMIT OF TEMPORARY DIVERSION BERM & DITCH SEE U9

LIMIT OF ROUGH GRADING

MATCHLINE STATION 14+40 SEE SHEET P8

14+78.83, 22.00' LT
PC, 22.87 TC

15+61.50, 22.00' LT
PCC, 16.53 TC

15+93.48, 24.66' LT
PRC, 14.37 TC

16+75.16, 31.50' LT
PCC, 10.06 TC

17+50.33, 31.50' LT
PT, 07.51 TC

18+07.83
31.50' LT
ECR, 06.44TC
06.11 EP

342+36.53
47.00' LT
BCR, 07.78 TC
07.45 EP

246.33' CROWN TRANS. FROM −2% TO −3%

END TRANS.

BEGIN TRANS.

72"SD (BEVELLED PIPE)

24"SD

60"SD

SKY VISTA DR. (PUBLIC)

FOR EX. ROUGH GRADING, SEE:
"VILLAGE 23A – ROUGH GRADING
By G. C. WALLACE, INC."
JOB # 62023.010
CITY OF LAS VEGAS # 107–V3574

EX. RIP RAP

14+78.83, 22.00' RT
PC, 22.87 TC

15+33.29, 22.00' RT
PCC, 18.68 TC

16+37.86, 30.87' RT
PCC, 11.33 TC

16+75.16, 34.00' RT
PCC, 09.33 TC

17+50.33
34.00' RT
PT, 06.33 TC

341+75.03
ALTA DRIVE

341+11.03
38.00' RT
01.85 TC
01.52 EP

341+20
EVC

18+86.83
SUNCREEK RD.

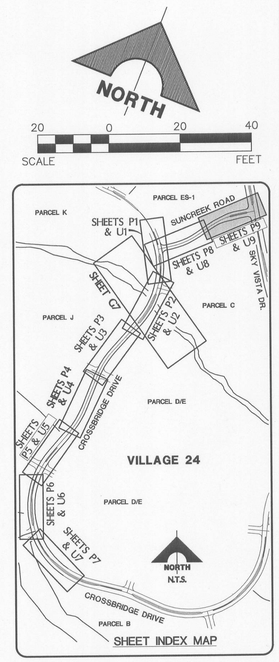
VILLAGE 24
PARCEL C
APN 137-22-000-015

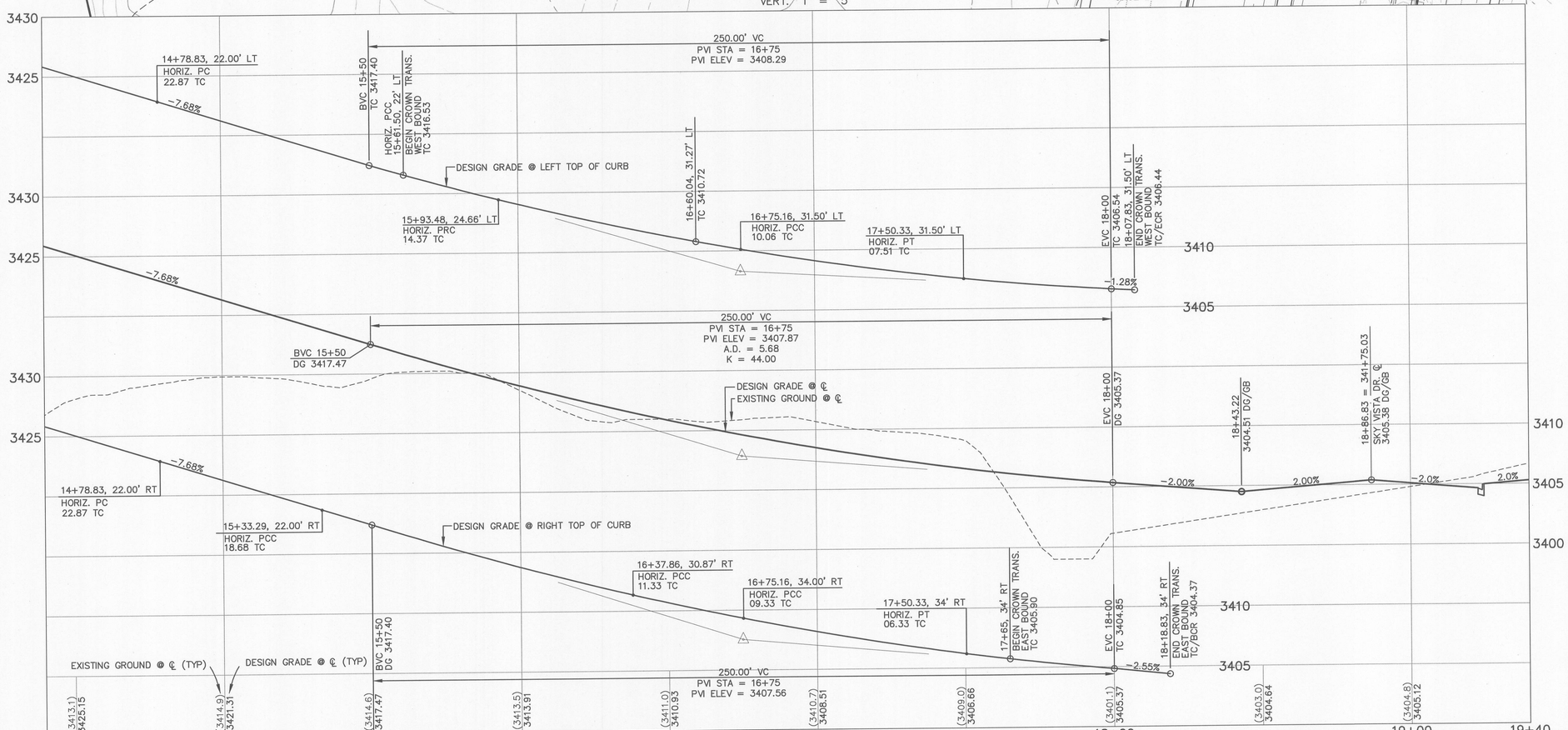
SUNCREEK ROAD (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

VILLAGE 23A
PARCEL N
APN 137-34-210-001

LIMIT OF ROUGH GRADING





NOTE

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BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
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UNDERGROUND SERVICE (USA)

CLV DRAWING NO. XXXXX

VICKI D. MARJERRISON
Exp. 12/31/2015
CIVIL
No. 13078
STATE OF NEVADA
PROFESSIONAL ENGINEER
DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 – NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	CONV APP

PROJECT NO. 62A24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:47:12

G.C. WALLACE COMPANIES
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SUMMERLIN

VILLAGE 24 – UNIT 2 IMPROVEMENTS

SUNCREEK ROAD
ROADWAY PLAN AND PROFILE 2

DRAWING P9
21 OF 82 SHTS

amor jerrison

F:\Projects\6001\62024-221\DWG\Production\Unit2 TDS Plans\24U2sP09-21.dwg

gcw2436.dwg,080712.tn

FOR EX. IMPROVEMENTS, SEE:
"VILLAGE 24 UNIT 1 IMPROVEMENTS"
By G. C. WALLACE, INC.
JOB # 62A.24.211
CITY OF LAS VEGAS # 107-Y4932

VILLAGE 24
PARCEL A
APN 164-03-111-001

(PUBLIC) CROSSBRIDGE DR.

98+85.51, 42' LT
ECR, 26.21' TC/GB

99+16.43, 48.67' LT
PCC, 25.51 TC

321+84.78, 61.14' LT
(25.04' TC/BVC)
MATCH IMPROVEMENTS

EX. TEMPORARY CHANNEL

LIMIT OF ROUGH GRADING
VILLAGE 24
PARCEL C
APN 137-22-000-015

324+33.29, 57.26' LT
PCC, 31.76 TC

324+94.32, 49.82' LT
PRC, 34.05 TC

MATCH EXISTING
BEGIN CONSTRUCTION

FOR NORTHWEST CURB DETAIL SEE 1/D9

470.28' CROWN TRANS. FROM 3.0% TO -2.0% – FROM 321+09.72 TO 325+80 (WEST SIDE ONLY)

323+15 BVC

MATCHLINE STATION 325+00 SEE SHEET P11

321+09.72
SKY VISTA DR.

99+95.25
CROSSBRIDGE DR.
& DESERT MOON RD.

EX. 50' LVVWD ESMT.

321+82.71, 1.02' RT
PCC, 23.99 TC

321+79.64
23.49 DG
BEGIN CONSTRUCTION

322+93.38, 6.23' LT
PCC, 27.40 TC

324+32.07, 3.60' LT
PRC, 32.04 TC

324+89.50, 8.19' LT
PRC, 34.35 TC

EXISTING TEMPORARY DIVERSION BERM

REMOVE

EX. RIP RAP

FOR EXISTING IMPROVEMENTS, SEE:
VILLAGE 23A/24
"SKY VISTA DRIVE IMPROVEMENTS"
By G. C. WALLACE, INC.
JOB # 62024.220
CITY OF LAS VEGAS # 107-V4292

FOR EX. ROUGH GRADING, SEE:
"VILLAGE 23A – ROUGH GRADING
By G. C. WALLACE, INC."
JOB # 62023.010
CITY OF LAS VEGAS # 107-V3574

321+83.02, 5.33' RT
PCC, 23.89 TC
BEGIN CONSTRUCTION

(PUBLIC) DESERT MOON RD.

321+80.84
35' RT, ECR
23.20' TC
MATCH IMPS.

100+60.16
40.67' LT
(21.56') TC/BCR

LIMIT OF ROUGH GRADING

VILLAGE 23A
PARCEL WS-1
APN 137-34-312-001

LIMIT OF ROUGH GRADING

NORTH

SCALE: 20 0 20 40 FEET

VILLAGE 30 | VILLAGE 23B | VILLAGE 23A | VILLAGE 24
ALTA DRIVE
SHEETS P16 & U16
SHEETS P17 & U17
PARCEL N
PARCEL E8-1
SUNCREEK ROAD
PARCEL C
PARCEL D/E
SHEETS P15 & U15
SHEETS P14 & U14
SHEETS P13 & U13
SHEETS P12 & U12
SHEETS P11 & U11
SKY VISTA DR.
CROSSBRIDGE DR.
NORTH N.T.S.
SHEET INDEX MAP

SKY VISTA DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

50.00' VC
LOW POINT ELEV = 3325.02
LOW POINT STA = 321+91.95
PVI STA = 322+09.44
PVI ELEV = 3324.89
A.D. = 4.30
K = 11.63

80.00' VC
PVI STA = 322+73.55
PVI ELEV = 3327.30
A.D. = −1.21
K = 66.24

270.00' VC
PVI STA = 324+50
PVI ELEV = 3331.64

321+84.78, 61.14' LT, BVC
(3325.04) TC/BCR
MATCH EXISTING CURB

322+34.09
60.87' LT, PCC
3325.82' TC

323+13.01
59.61' LT, EVC
3328.30' TC

323+15 BVC
28.35' TC

323+91.89, 58.17' LT
TC 3330.43

324+33.29, 57.26' LT
HORIZ. PCC
31.76 TC

324+94.32, 49.82' LT
HORIZ. PRC
34.05 TC

DESIGN GRADE @ LEFT TOP OF CURB

270.00' VC
PVI STA = 324+50
PVI ELEV = 3331.60
A.D. = 2.20
K = 122.73

323+15 BVC
27.55' DG

REMOVE EXISTING BERM
AND EXISTING TEMPORARY
DRAINAGE INLET

321+09.72
DESERT MOON RD.
& CROSSBRIDGE DR.
(21.39') DG

321+79.64 23.49' DG
321+84.78 23.64' DG
MATCH EXISTING
IMPROVEMENTS

DESIGN GRADE @ ℄

EXISTING ROUGH GRADE @ ℄

EX. DESIGN GRADE @ ℄

(3.00%)

FOR EX. IMPROVEMENTS, SEE:
"VILLAGE 24 UNIT 1 IMPROVEMENTS"
By G. C. WALLACE, INC.
JOB # 62A.24.211
CITY OF LAS VEGAS # 107-Y4932

FOR EX. ROUGH GRADING, SEE:
"VILLAGE 23A – ROUGH GRADING
By G. C. WALLACE, INC."
JOB # 62023.010
CITY OF LAS VEGAS # 107-V3574

270.00' VC
PVI STA = 324+50
PVI ELEV = 3331.27

BVC 323+15
TC 3327.22

321+80.84, 35' RT
MATCH EXISTING CURB
3323.20 TC/EOR

DESIGN GRADE @ RIGHT TOP OF CURB

3.00%

EX. ROUGH GRADE @ ℄ (TYP)
DESIGN GRADE @ ℄ (TYP)

3318.10 | 3319.60 | 3321.10 | 3322.60 | 3324.10 | 3325.60 | 3327.10 | 3328.65 | 3330.39 | 3332.34 (3330.85) | (3332.95) 3334.49

320+00 | 321+00 | 322+00 | 323+00 | 324+00 | 325+00

NOTE

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BENCHMARK

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CLARK COUNTY TRAFFIC OPERATIONS DIVISION
1-702-229-6611
LAS VEGAS AREA COMPUTERIZED TRAFFIC SYSTEM

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Avoid cutting underground utility lines. It's costly.
Call before you Dig.
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UNDERGROUND SERVICE (USA)

CLV DRAWING NO. XXXXX

LICENSED ENGINEER – STATE OF NEVADA
VICKI D. MARJERRISON
No. 10472
CIVIL
DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 – NOT FOR CONSTRUCTION

DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
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PLOT DATE: 05-14-14
PLOT TIME: 13:47:41

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SUMMERLIN
VILLAGE 24 – UNIT 2 IMPROVEMENTS
SKY VISTA DRIVE
ROADWAY PLAN AND PROFILE 1

DRAWING P10
22 OF 82 SHTS

emar jerrison
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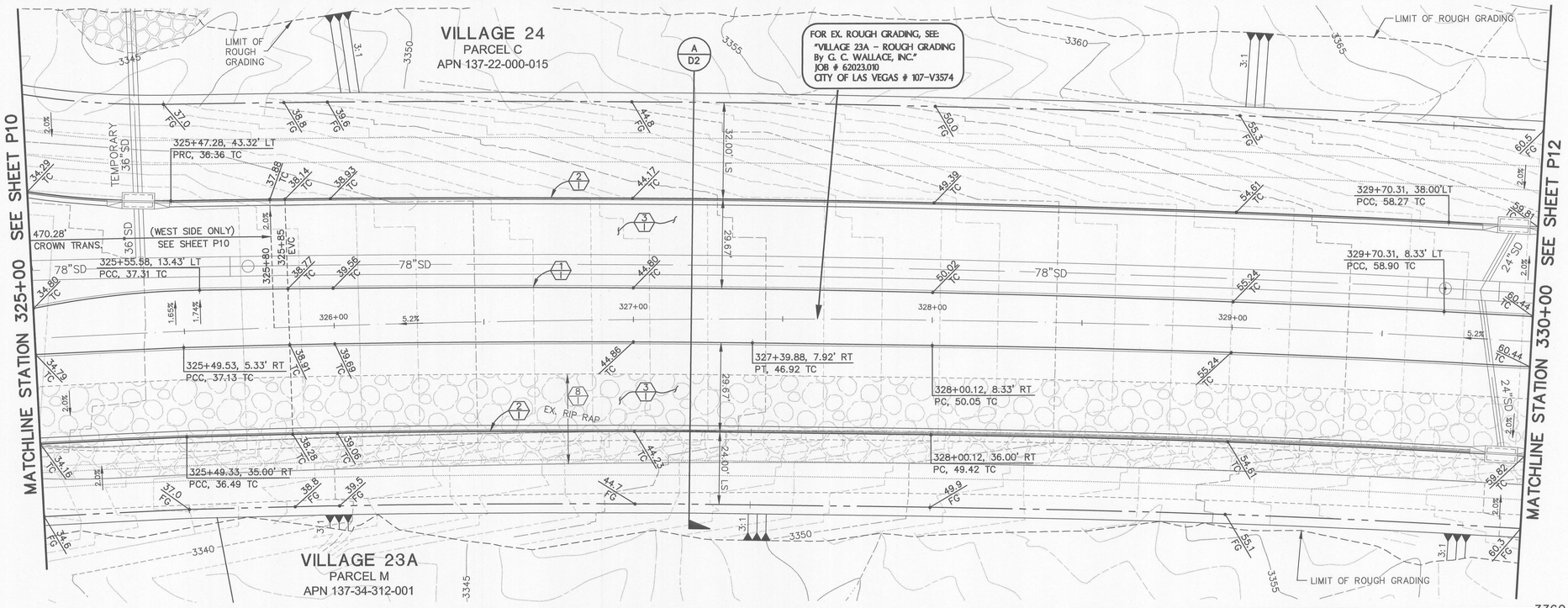
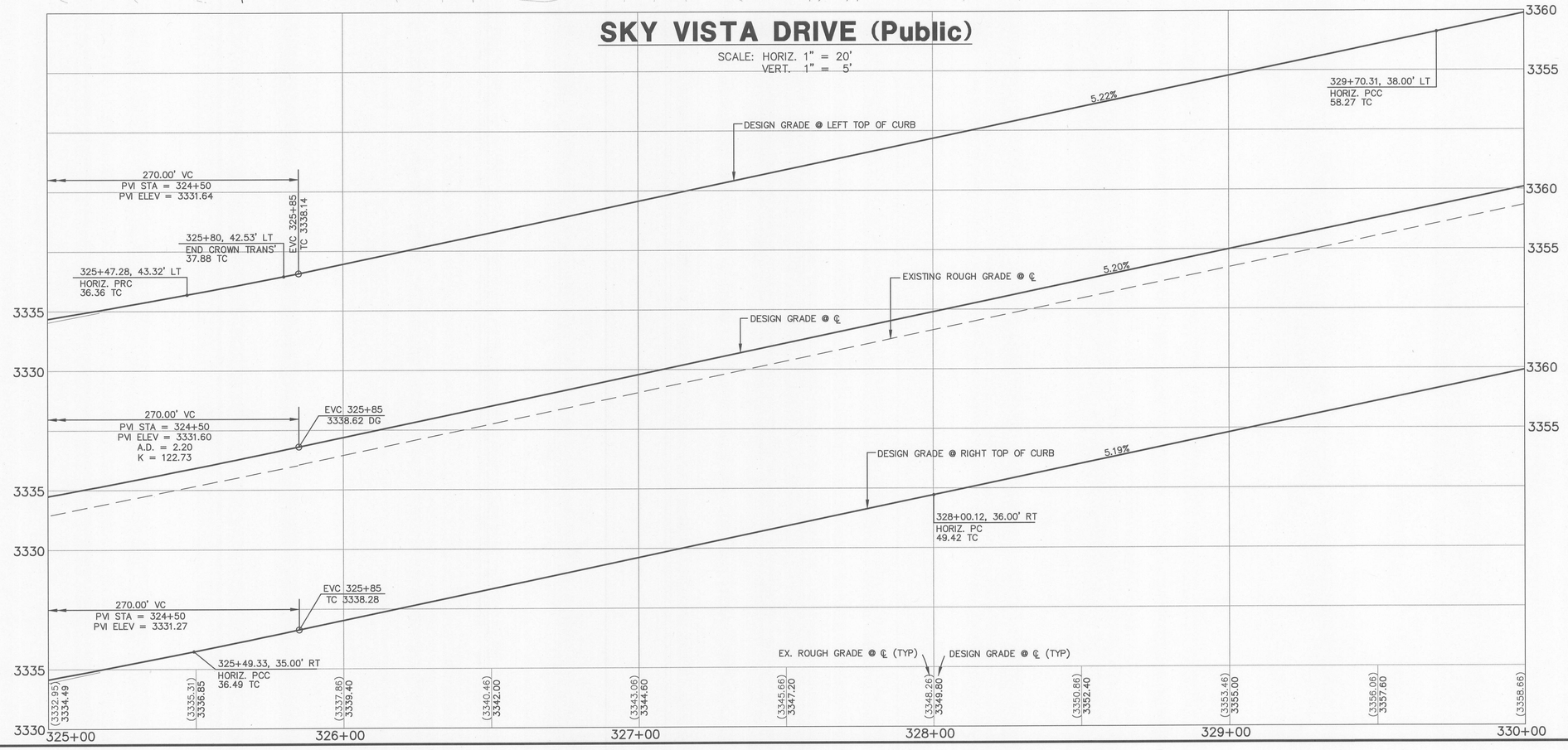
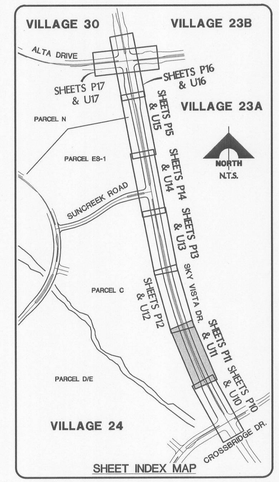


SKY VISTA DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'







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1555 S. RAINBOW BOULEVARD - LAS VEGAS, NV 89146
T: 702.804.2000 F: 702.804.2299 GCWALLACE.COM
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PROJECT NO. 62A.24.212
DESIGN:
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PLOT DATE: 05-14-14
PLOT TIME: 13:48:10

SUMMERLIN
VILLAGE 24 – UNIT 2 IMPROVEMENTS
SKY VISTA DRIVE
ROADWAY PLAN AND PROFILE 2

DRAWING P11
23 OF 82 SHTS

CLV DRAWING NO. XXXXX

ENGINEER - STATE OF NEVADA
VICKI MARIE HARRISON
Exp. 12/31/2015
No. 13572
PROFESSIONAL
CIVIL
DATE: 5-14-14

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

emarjenson
F:\Projects\600\62024-221\DWG\Production\Unit2 TDS Plans\24\2sP11-23.dwg
psc2436.dwg 050712.ctb

FOR EX. ROUGH GRADING, SEE:
"VILLAGE 23A – ROUGH GRADING
By G. C. WALLACE, INC."
JOB # 62023.010
CITY OF LAS VEGAS # 107-V3574

VILLAGE 24
PARCEL C
APN 137-22-000-015

VILLAGE 23A
PARCEL M
APN 137-34-312-001

LIMIT OF ROUGH GRADING

MATCHLINE STATION 330+00 SEE SHEET P11

MATCHLINE STATION 335+00 SEE SHEET P13

78"SD

32.00' LS

76.00' ROW

24.00' LS

EX. RIP RAP

331+00 BVC

333+00 PVI

334+40 EVC

5.2%

3.0%

2.0%

3:1

SKY VISTA DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

280.00' VC
PVI STA = 333+00
PVI ELEV = 3375.41
A.D. = −2.20
K = 127.27

BVC 331+60
TC 3368.13

EVC 334+40
TC 3379.61

3.00%

5.22%

DESIGN GRADE @ LEFT TOP OF CURB

280.00' VC
PVI STA = 333+00
PVI ELEV = 3375.80
A.D. = −2.20
K = 127.27

EVC 334+40
3380.00 DG

BVC 331+60
3368.52 DG

DESIGN GRADE @ ℄
EXISTING ROUGH GRADE @ ℄

5.20%

DESIGN GRADE @ RIGHT TOP OF CURB

5.19%

3360.20
(3361.26) 3362.80
(3363.86) 3365.40
(3366.46) 3368.00
(3369.00) 3370.54
(3371.34) 3372.88
(3373.49) 3375.03
(3375.44) 3376.98
(3377.20) 3378.74
(3378.76) 3380.30
(3380.26) 3381.80

330+00 331+00 332+00 333+00 334+00 335+00

3355 3360 3365 3370 3375 3380 3385

NORTH

SCALE 20 0 20 40 FEET

VILLAGE 30 | VILLAGE 23B | VILLAGE 23A | VILLAGE 24

ALTA DRIVE
SUNCREEK ROAD
GROSSBRIDGE DR.
PARCEL N
PARCEL E8-1
PARCEL C
PARCEL D/E
SHEETS P17 & U17
SHEETS P16 & U16
SHEETS P15 & U15
SHEETS P14 & U14
SHEETS P13 & U13
SHEETS P12 & U12
SHEETS P11 & U11
SKY VISTA DR.
NORTH N.T.S.

SHEET INDEX MAP

NOTE

THIS SET OF DRAWINGS IS BASED UPON NAVD 88 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM NO. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

Avoid hitting underground traffic signal system and streetlight system conduits, it's costly.
Call before you UnderGround.
1-702-455-7511
CLARK COUNTY TRAFFIC OPERATIONS
AND
1-702-229-6611
LAS VEGAS AREA COMPUTERIZED TRAFFIC SYSTEM

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

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UNDERGROUND SERVICE (USA)

CLV DRAWING NO. XXXXX

DRAWING P12
24 OF 82 SHTS

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:48:38

SUMMERLIN
VILLAGE 24 – UNIT 2 IMPROVEMENTS
SKY VISTA DRIVE
ROADWAY PLAN AND PROFILE 3

emar jerlson

F:\Projects\600\62024-221\DWG\Production\Unit2 TDS Plans\24U2sP12-24.dwg

gcw24.36.dwg,080712.rm

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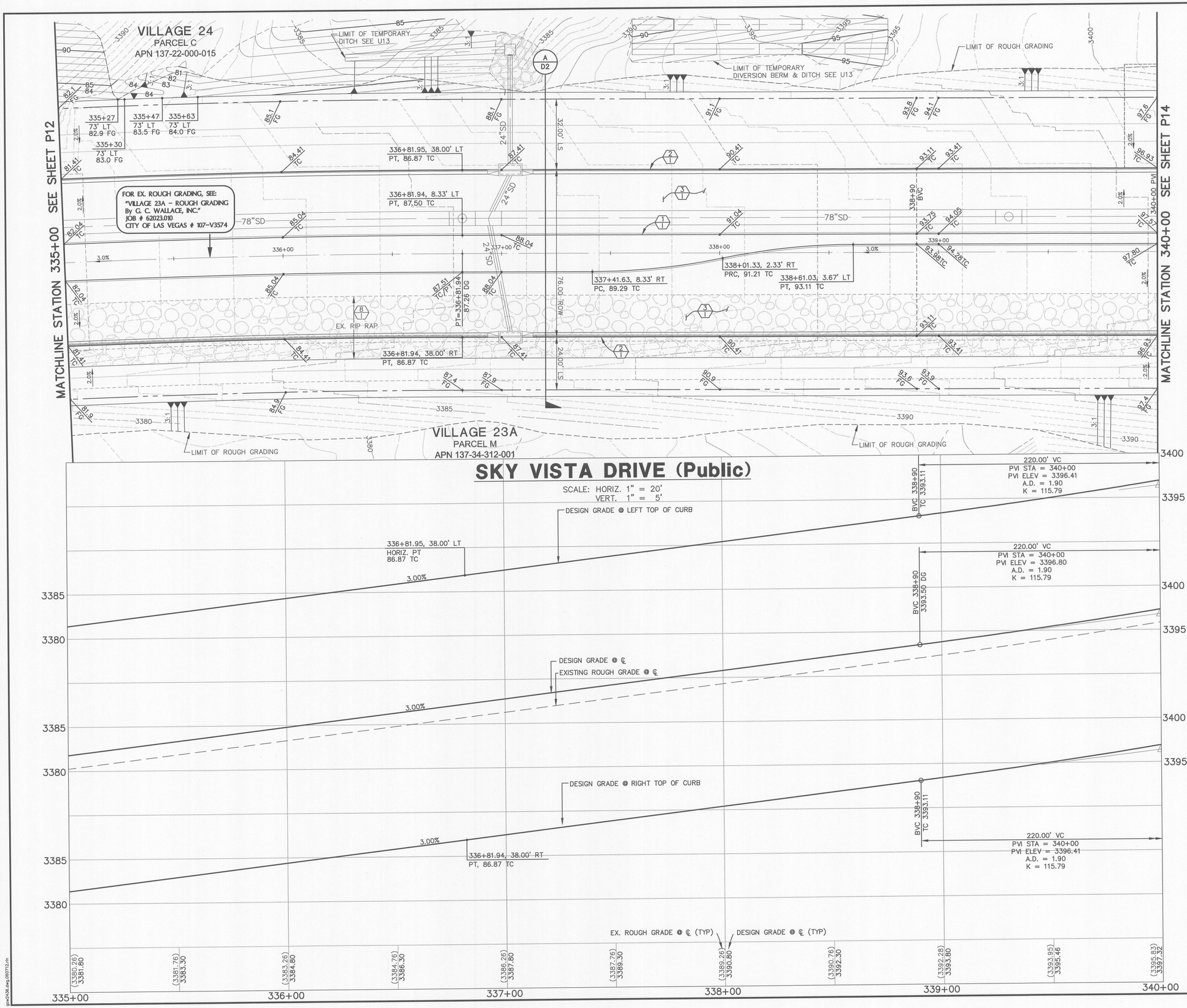
LAS VEGAS SACRAMENTO - RENO

REGISTERED PROFESSIONAL ENGINEER – STATE OF NEVADA
No. 13013 – EMAR JERRELSON – Exp. 12/31/2015 – CIVIL
DATE: 5-14-14

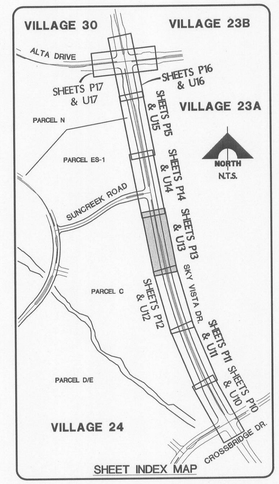
TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE AGEN APP	DATE GCW APP





20 0 20 40
SCALE FEET



SHEET INDEX MAP

NOTE

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BENCHMARK

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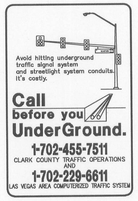





REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GOV APP

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:49:06

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

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LAS VEGAS · SACRAMENTO · RENO

SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
SKY VISTA DRIVE
ROADWAY PLAN AND PROFILE 4

DRAWING P13
25 OF 82 SHTS

CLV DRAWING NO. XXXXX

F:\Projects\600\62024-221\DWG\Production\Unit2 TDS Plans\24U2sP13-25.dwg
emarjerrison
gcw2436.dwg.060712.rh

MATCHLINE STATION 340+00 SEE SHEET P13

MATCHLINE STATION 345+00 SEE SHEET P15

LIMIT OF ROUGH GRADING

SUNCREEK RD

SEE SHT P9

18+18.83, 34.00' RT
ECR, 04.37 TC
END CROWN TRANSITION

341+11.03, 38.00' LT
PC, 01.85 TC

341+75.03
SKY VISTA DR.

18+86.83
SUNCREEK RD.

341+00 PVI

341+10 EVC

341+11.03, 8.33' LT
PC, 02.49 TC

341+11.03, 3.67' LT
PT, 02.72 TC

341+11.03
38.00' LT
01.85 TC
01.52 EP

18+07.83
31.50' LT
ECR, 06.43 TC
END CROWN TRANSITION

06.48 TC/GB

06.72 TC/GB

08.22 TC

342+36.53
47.00' LT
BCR, 07.78 TC
07.45 EP

342+36.53, 8.33' LT
PC, 08.63 TC

342+35.03, 1.44' RT
PCC, 08.71 TC

342+36.53
38.00' LT
8.00 TC
07.67 EP

342+79.97, 8.33' RT
PT, 10.76 TC

EX. RIP RAP

VILLAGE 24
PARCEL ES-1
APN 137-22-000-015

344+36.53, 49.00' LT
PC, 17.58 TC

344+93.10, 43.62' LT
PRC, 20.28 TC

344+30 BVC

VILLAGE 23A
PARCEL N
APN 137-34-210-001

FOR EX. ROUGH GRADING, SEE:
"VILLAGE 23A – ROUGH GRADING
By G. C. WALLACE, INC."
JOB # 62023.010
CITY OF LAS VEGAS # 107-V3574

NORTH

SCALE 20 0 20 40 FEET

VILLAGE 30 | VILLAGE 23B | VILLAGE 23A | VILLAGE 24

ALTA DRIVE | SUNCREEK ROAD | SKY VISTA DR. | CROSSBRIDGE DR.

PARCEL N | PARCEL ES-1 | PARCEL C | PARCEL D/E

SHEETS P16 & U16 | SHEETS P17 & U17 | SHEETS P15 & U15 | SHEETS P14 & U14 | SHEETS P13 & U13 | SHEETS P12 & U12 | SHEETS P11 & U11 | SHEETS P10 & U10

NORTH N.T.S.

SHEET INDEX MAP

SKY VISTA DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

DESIGN GRADE @ LEFT TOP OF CURB

DESIGN GRADE @ ℄

EXISTING ROUGH GRADE @ ℄

DESIGN GRADE @ RIGHT TOP OF CURB

EX. ROUGH GRADE @ ℄ (TYP)

DESIGN GRADE @ ℄ (TYP)

220.00' VC
PVI STA = 340+00
PVI ELEV = 3396.41
A.D. = 1.90
K = 115.79

EVC 341+10
TC 3401.80

341+11.03, 38' LT
HORIZ. ECR
3401.85 TC

342+36.53, 47.00' LT
HORIZ. BCR
07.78 TC

341+75.03, SUNCREEK RD. ℄
3405.38 DG

220.00' VC
PVI STA = 340+00
PVI ELEV = 3396.80
A.D. = 1.90
K = 115.79

EVC 341+10
3402.19 DG

240.00' VC
PVI STA = 345+50
PVI ELEV = 3423.36

344+36.53
49.00' LT
HORIZ. PC
17.58 TC

344+93.10, 43.62' LT
HORIZ. PRC
20.28 TC

BVC 344+30
TC 3417.26

240.00' VC
PVI STA = 345+50
PVI ELEV = 3423.75
A.D. = −1.90
K = 126.32

BVC 344+30
3417.87 DG

240.00' VC
PVI STA = 345+50
PVI ELEV = 3423.36
A.D. = −1.90
K = 126.32

BVC 344+30
TC 3417.48

(3397.90) 3399.41	(3400.18) 3401.70	(3402.61) 3404.15	(3405.06) 3406.60	(3407.51) 3409.05	(3409.96) 3411.50	(3412.41) 3413.95	(3414.86) 3416.40	(3417.29) 3418.83	(3419.57)

340+00 | 341+00 | 342+00 | 343+00 | 344+00 | 345+00

3425 | 3420 | 3400 | 3395

NOTE

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STATE OF NEVADA — VICKI D. MARJERRISON — No. 13079 — CIVIL — PROFESSIONAL ENGINEER — DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
	DATE	AGEN APP
	DATE	GCW APP

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:49:35

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SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

SKY VISTA DRIVE
ROADWAY PLAN AND PROFILE 5

DRAWING P14
26 OF 82 SHTS

CLV DRAWING NO. XXXXX

F:\Projects\600\62024-221\DWG\Production\Unit2 TDS Plans\24U2sP14-26.dwg emcarjenson

gpx2A36.dwg 050712.cfx

MATCHLINE STATION 345+00 SEE SHEET P14

MATCHLINE STATION 350+00 SEE SHEET P16

VILLAGE 24
PARCEL ES-1
APN 137-22-000-015

FOR EX. ROUGH GRADING, SEE:
"VILLAGE 23A – ROUGH GRADING
By G. C. WALLACE, INC."
JOB # 62023.010
CITY OF LAS VEGAS # 107-V3574

VILLAGE 23A
PARCEL N
APN 137-34-210-001

LIMIT OF ROUGH GRADING

345+56.29, 38.31' LT
PT, 23.03 TC

345+42.54, 8.33' LT
AP, 23.12 TC

345+50 PVI

346+00

347+00

348+00

348+28.53, 8.33' RT
PC, 32.35 TC

348+61.87, 38.00' RT
PC, 32.72 TC

348+90, 45.69' LT
33.41 TC

348+90 BEGIN TRANSITION 2.70% TO 2.70%

349+00

349+09.02, 2.67' LT
PRC, 34.98 TC

349+19.05, 43.50' RT
PRC, 34.32 TC

349+75.29
79.58' LT
37.1 FG

349+76.23, 49.00' RT
PT, 35.93 TC

349+76.78, 47.61' LT
PC, 36.53 TC

349+82.29, 48.35' LT
PT, 36.75 TC

349+89.51, 13.67' LT
PT, 37.62 TC

349+79.90, 18.00' LT
PT, 36.01 TC

42"SD

36"SD

24"SD

VARIES

EX. RIP RAP

EVC 345+70

EVC 346+70

SKY VISTA DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

240.00' VC
PVI STA = 345+50
PVI ELEV = 3423.36

EVC 346+70
TC 3426.90

DESIGN GRADE @ LEFT TOP OF CURB

2.96%

345+56.29, 38.31' LT
HORIZ. PT
23.03 TC

240.00' VC
PVI STA = 345+50
PVI ELEV = 3423.75
A.D. = −1.90
K = 126.32

EVC 346+70
3427.35 DG

DESIGN GRADE @ ℄
EXISTING ROUGH GRADE @ ℄

3.00%

240.00' VC
PVI STA = 345+50
PVI ELEV = 3423.36
A.D. = −1.90
K = 126.32

EVC 346+70
TC 3426.96

DESIGN GRADE @ RIGHT TOP OF CURB

3.00%

348+61.87, 38.00' RT
HORIZ. PC
32.72 TC

349+19.05, 43.50' RT
HORIZ. PRC
34.32 TC

349+76.23, 49.00' RT
HORIZ. PT
35.93 TC

348+90, 45.69' LT
BEGIN CROWN TRANS.
33.41 TC

349+76.78, 47.61' LT
BEGIN BUS TURNOUT
36.53 TC/PC

3.60%

349+82.29, 48.35' LT
BUS TURNOUT PT
36.75 TC

EX. ROUGH GRADE @ ℄ (TYP)

DESIGN GRADE @ ℄ (TYP)

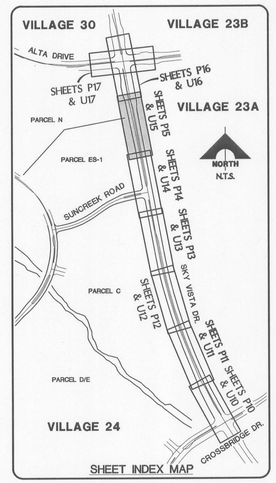
3421.11	(3421.64) 3423.18	(3423.52) 3425.06	(3425.19) 3426.73	(3426.71) 3428.25	(3428.21) 3429.75	(3429.71) 3431.25	(3431.21) 3432.75	(3432.71) 3434.25	(3434.21) 3435.75	(3435.71)

345+00 346+00 347+00 348+00 349+00 350+00

3420 3425 3430 3435 3440

SCALE: 20 0 20 40 FEET

NORTH



SHEET INDEX MAP

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CLV DRAWING NO. XXXXX

VICKI D. MARJERRISON
No. 13079
PROFESSIONAL ENGINEER – STATE OF NEVADA
DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP	DATE

PROJECT NO. 62A.24.212

DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:50:03

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SUMMERLIN

VILLAGE 24 – UNIT 2 IMPROVEMENTS

SKY VISTA DRIVE
ROADWAY PLAN AND PROFILE 6

DRAWING
P15
27 OF 82 SHTS

F:\Projects\600\62024 - 221\DWG Production\Unit2 TDS Plans\24U2eP15 - 27.dwg
emcarjerdson

gcw2426.dwg 060712.rm

MATCHLINE STATION 350+00 SEE SHEET P15

VILLAGE 24
PARCEL M
APN 137-22-000-015

VILLAGE 30

LIMIT OF ROUGH GRADING

350+15.63
89.67' LT
38.8 FG

350+16.59 56.92' LT
PC, 38.18 TC

350+22.65, 57.67' LT
PT, 38.41 TC

350+30.43 LEVEL

350+97.50, 57.67' LT
PC, 41.15 TC

351+01.61, 57.33' LT
PT, 41.28 TC

351+02.22
89.67' LT
41.9 FG

351+57.53, 48.01' LT
PC, 43.15 TC

351+61.64, 47.67' LT
PT, 43.28 TC

351+61.67
79.76' LT
43.9 FG

352+20 END TRANSITION 2.7%

352+28.89
47.67' LT
45.68 TC
ECR

352+39.51, 18.00' LT
PC, 45.35 TC

352+39.51, 13.67' LT
PC, 45.21 TC

240+31.45, 49.00 LT
ALTA DRIVE=
352+58.78, 75.06 LT
BCR, 47.48 TC

ALTA DR. (PUBLIC)

EX. RIP RAP

FLOW LINE

SEE SHEET G1 FOR ALTA DR. ROUGH GRADING

TEMPORARY DIVERSION BERMS SEE U16

353+77.42 BCR
58.67 LT
49.87 TC

FUTURE STORM DRAIN & DROP INLET

END OF PAVEMENT
END OF CONSTRUCTION

353+42.50
BEGIN WEST
TRANSITION
2.70% TO -2.0%

353+77.42
7.00' LT
49.12 TC

353+67.03
7.00' RT
48.83 TC
PT

239+60.40
ALTA DRIVE

353+01.40
SKY VISTA DR.

355+10 END WEST
TRANSITION 2.70% TO -2.0%

353+65.68
2.82' RT
48.54 TC
PCC

353+74.75
5.04' RT
48.78 TC
PCC

353+80.00
BEGIN FUTURE
EAST TRANSITION
2.70% TO -2.0%

354+20.00
END FUTURE
EAST TRANSITION

EX. RIP RAP TO REMAIN

239+28.94, 76.39' RT
353+74.75, 38.00' RT
47.85 TC/ECR

238+99.05
49.00' RT
46.07 TC/BCR

FOR EX. ROUGH GRADING, SEE:
"VILLAGE 23A – ROUGH GRADING
By G. C. WALLACE, INC."
JOB # 62023.010
CITY OF LAS VEGAS # 107-V3574

SEE SHEET P17
FOR ALTA DR.
IMPROVEMENTS

351+60 BEGIN TRANSITION -2.0% TO -2.70%

352+20 END TRANSITION 2.7%

352+26.23 BCR
49.00' RT
43.10 TC

238+75.15 ECR
38.00' LT
43.07 TC

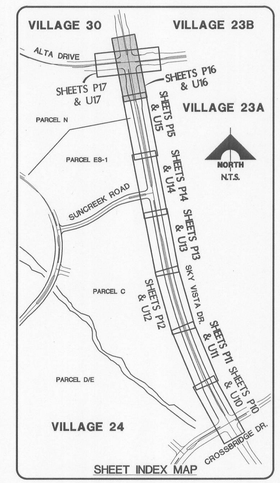
VILLAGE 23A
PARCEL N
APN 137-34-210-001

VILLAGE 23B
PARCEL O/P/Q/R
APN 137-22-000-015

LIMIT OF ROUGH GRADING

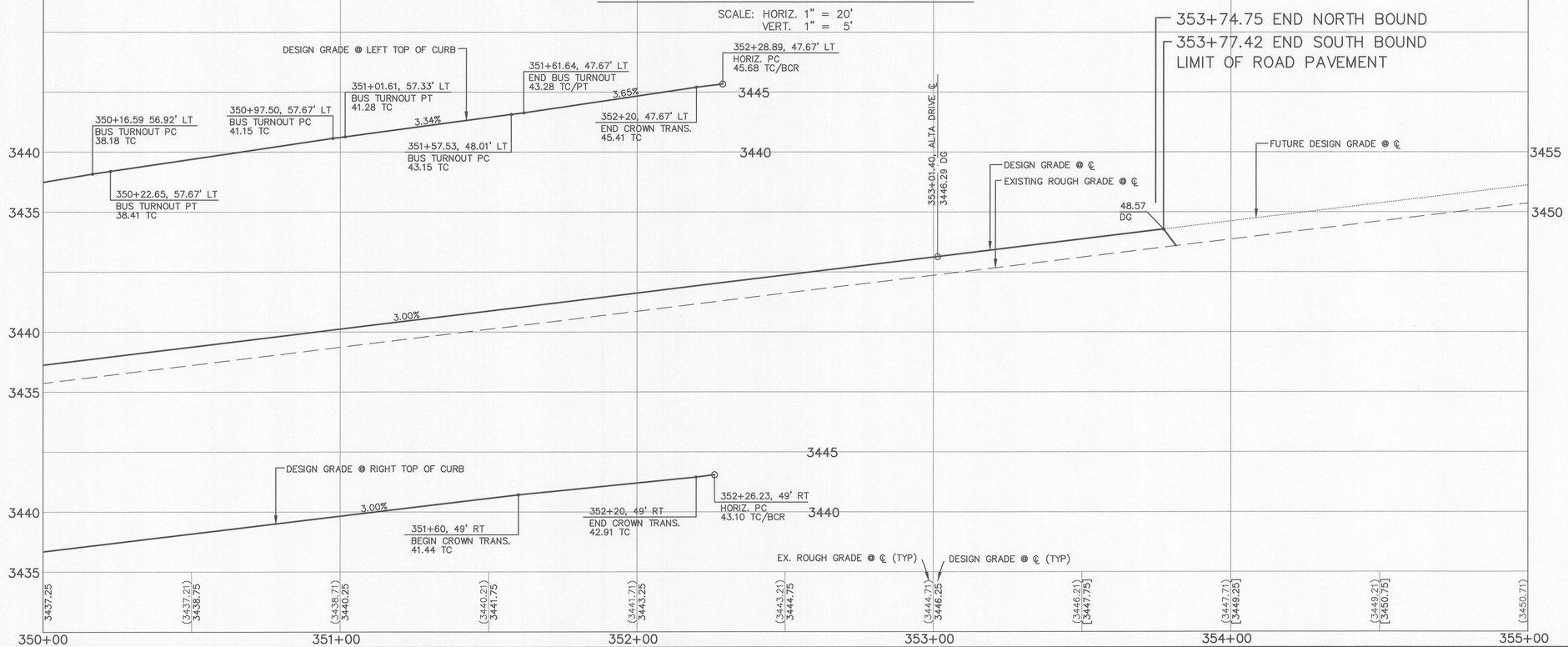
NORTH

SCALE 20 0 20 40 FEET



SKY VISTA DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'



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LAS VEGAS · SACRAMENTO · RENO

ENGINEER - STATE OF NEVADA
VICKI D. MARJERRISON
No. 13079
CIVIL
PROFESSIONAL ENGINEER
DATE: 5-14-14

REV	DATE	DESCRIPTION	AGEN APP	DATE	GOV APP

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

PROJECT NO. 62A-24212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:50:31

SUMMERLIN
VILLAGE 24 – UNIT 2 IMPROVEMENTS
SKY VISTA DRIVE
ROADWAY PLAN AND PROFILE 7

DRAWING
P16
28 OF 82 SHTS

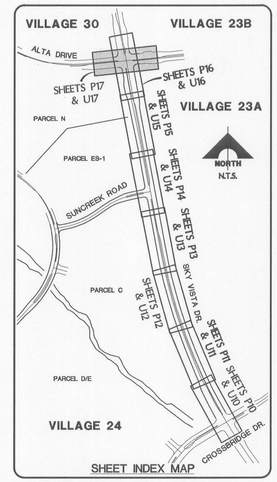
CLV DRAWING NO. XXXXX

F:\Projects\600\62024-221\DWG\Production\Unit2 TDS Plans\24U2cP16-28.dwg
emarjerrison
cpe2450.dwg 080712.tbl

VILLAGE 30
LIMIT OF ROUGH GRADING
LIMIT OF TEMPORARY DIVERSION BERM SEE U16
FOR EX. ROUGH GRADING, SEE: "VILLAGE 23B WATERLINE IMPROVEMENT GRADING, 2003" by G. C. WALLACE, INC. JOB # 62023.260, CLV # 565-408
SEE SHEET G1 FOR ROUGH GRADING
LIMIT OF TEMPORARY DIVERSION BERM SEE U17
VILLAGE 24
PARCEL M
APN 137-22-000-015
LIMIT OF ROUGH GRADING
END OF PAVEMENT, BEGIN ROUGH GRADE
END OF PAVEMENT END OF CONSTRUCTION
SKY VISTA DR. (SEE SHEET P16)
ALTA DRIVE
VILLAGE 23B
PARCEL O
APN 137-22-000-015
LIMIT OF ROUGH GRADING
FOR EX. ROUGH GRADING, SEE: "VILLAGE 23A - ROUGH GRADING By G. C. WALLACE, INC." JOB # 62023.010 CITY OF LAS VEGAS # 107-V3574
FOR EX. IMPROVEMENTS, SEE: "VILLAGE 23A/23B ALTA DRIVE IMPROVEMENTS" by G. C. WALLACE, INC. JOB # 62023.270, CLV #
(NOT SHOWN: 236+50 BEGIN TRANSITION NORTH -2.0% TO 2.75%)
MATCH EXISTING IMPROVEMENTS
EX. RIP RAP
VILLAGE 23A
PARCEL N
APN 137-34-210-001
LIMIT OF ROUGH GRADING

353+77.42 BCR, 58.67 LT, 49.87 TC
240+55.35 ECR, 38.00' RT, 50.46 TC
353+42.50 BEGIN WEST TRANSITION 2.70% TO -2.0%
240+60 BEGIN TRANSITION NORTH 2.75% TO -2.0%
240+34.59, 8.33' RT, 49.18 TC, PT
240+55.36, 8.33' RT, 49.79 TC
353+01.40 SKY VISTA DR.
240+55.36, 2.67' RT, 49.62 TC
240+34.59, 2.67' RT, 48.99 TC, PC
240+50 BEGIN SOUTH TRANSITION -2.75% TO -2.0%
240+55.36, 49.00' RT, 48.18 TC
240+31.45, 49.00 LT, ALTA DRIVE=, 352+58.76, 75.06 LT BCR, 47.46 TC
352+28.89, 47.67' LT, 45.68 TC, EVC
241+01.01, 73.00' LT, 50.4 FG
238+95.92, 2.67' LT, PC, 44.83 TC
238+95.92, 8.33' LT, PT, 44.53 TC
238+80 END TRANSITION NORTH -2.0% TO 2.75%
238+70 END TRANSITION SOUTH -2.0% TO -2.75%
238+30 BEGIN EX. TRANSITION SOUTH -2.75% TO -2.0%
238+75.15 ECR, 38.00' LT, 43.07 TC
238+50, 38.00' LT, (42.46) TC, MATCH EX.
352+26.23 BCR, 49.00' RT, 43.10 TC
238+99.05 BCR, 49.00' RT, 46.07 TC
238+50, 49.00' RT, 44.31 TC, MATCH EX.
238+22.09 PT, 49.00' RT, (43.20) TC
237+87.38 EVC
237+46.84 FLAT

NORTH
SCALE 20 0 20 40 FEET



SHEET INDEX MAP

ALTA DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

FUTURE DESIGN GRADE @ RIGHT TOP OF CURB
ROUGH GRADE @ RIGHT TOP OF CURB
241+19.10, 38' RT, BEGIN BUS TURN-OUT, [52.01] TC
240+60, 38' RT, BEGIN NORTH TRANSITION, [50.80] TC
240+55.35, 38' RT, END PAVEMENT 50.46 TC, ECR
240+55.36 END ROAD IMPROVEMENTS BEGIN ROUGH GRADING SEE SHEET G1
REMOVE EX. BERM AND RIPRAP
EXISTING GROUND @ ℄
DESIGN GRADE @ ℄
EXISTING ROUGH GRADE @ ℄
FUTURE DESIGN GRADE @ ℄
ROUGH GRADE @ ℄
239+60.40 SKY VISTA DR. ℄ 3446.29 DG
238+50 MATCH EXISTING IMPROVEMENTS
260.00' VC
PVI STA = 236+57.38
PVI ELEV = 3437.20
A.D. = -1.60
K = 162.47
EVC 237+87.38 DG (3441.10)
EXISTING DESIGN GRADE @ ℄
FUTURE DESIGN GRADE @ LEFT TOP OF CURB
ROUGH GRADE @ LEFT TOP OF CURB
241+00, 49' LT, END SOUTH TRANSITION, [3449.87] TC
240+55.35, 49' LT, END OF PAVEMENT 3448.18 TC
240+50, 49' LT, BEGIN SOUTH TRANSITION 3448.02 TC
240+31.45, 49' LT, 3447.46 TC/BCR
DESIGN GRADE @ LEFT TOP OF CURB
238+99.05, 49' RT, 46.07 TC/BGR
238+80, 49' RT, END SOUTH TRANSITION 45.50 TC
238+50, 49' RT, MATCH EX. PAVEMENT (44.31) TC
238+22.09, 49' RT, (43.20) TC
EXISTING DESIGN GRADE @ RIGHT TOP OF CURB
DESIGN GRADE @ RIGHT TOP OF CURB
238+75.15, 3443.07 TC, ECR
238+70, 3442.92 TC, END SOUTH TRANSITION
238+50, (3442.46) TC, MATCH EXISTING PAVEMENT BEGIN IMPROVEMENTS
238+30, (3441.99) TC, BEGIN SOUTH TRANSITION
EXISTING DESIGN GRADE @ LEFT TOP OF CURB
DESIGN GRADE @ LEFT TOP OF CURB
EXISTING GROUND @ ℄ (TYP)
FUTURE DESIGN GRADE @ ℄ (TYP)
EX. GROUND @ ℄ (TYP)
DESIGN GRADE @ ℄ (TYP)

3453.48	(3458.3) 3451.98	(3455.9) 3450.48	(3452.1) 3448.98	(3446.0) 3447.48	(3448.1) 3445.98	(3446.8) 3444.48	(3445.9) 3442.98	(3444.0) 3441.48	(3438.8) 3439.94	(3437.5)
242+00		241+00		240+00		239+00		238+00		237+00

NOTE

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BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM NO. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

Avoid hitting underground traffic signal system and streetlight system conduits. It's costly.
Call before you UnderGround.
1-702-455-7511 CLARK COUNTY TRAFFIC OPERATIONS AND 1-702-229-6611 LAS VEGAS AREA COMPUTERIZED TRAFFIC SYSTEM

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

Avoid cutting underground utility lines. It's costly.
Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE (USA)

CLV DRAWING NO. XXXXX

ENGINEER, STATE OF NEVADA — NICKI D. MARTIN — No. 13019 — PROFESSIONAL ENGINEER — Exp. 12/31/2015 — CIVIL
DATE 5-14-14

REV	DATE	DESCRIPTION	DATE AGEN APP	DATE GOV APP

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

PROJECT NO. 62A.24212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:50:59

G.C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
1555 S. RAINBOW BOULEVARD · LAS VEGAS, NV 89146
T: 702.804.8000 F: 702.804.8299 · GCWALLACE.COM
LAS VEGAS · SACRAMENTO · RENO

SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
ALTA DRIVE
ROADWAY PLAN AND PROFILE
DRAWING P17
29 OF 82 SHTS

emarjenison

F:\Projects\62A\62024-221\GWC\Production\Unit2 TDS Plans\24U2eP17-29.dwg

gpw2438.dwg,060712.pln

VILLAGE 24
PARCEL ES-1
APN 137-22-000-015

SUNCREEK ROAD SEE SHEET U8

LIMIT OF ROUGH GRADING

TEMPORARY DIVERSION BERM SEE SHEET G6

TEMPORARY DITCH SEE SHEET G6

35+95.18 NORTH BOUND
35+69.00 SOUTH BOUND
END ROUGH GRADE
BEGIN IMPS., SEE SHT G6

SEE SHEET G6

RIPRAP D50= 6" THICKNESS=12"

RIPRAP D50= 8" THICKNESS=16"

TEMPORARY DRAINAGE INLET SEE SHEET G6

10+34.56, 20' LT SUNCREEK RD. = 36+24.09, 34.83' LT, CROSSBRIDGE DR.

35+87.73, 33.52' LT
FUTURE D.I., 35+82, 33.50'RT
L= 10.0' D= 6.24'
[45.35] TC
Δ=3°49'57" R=721.00'
L=48.23' T=24.12'
UDACS 2.06.03

35+67.06 29.5' LT

35+70.94 29.5' LT

35+59, 21' LT
24" BLIND FLANGE W/2" 24"W MANUAL AIR RELEASE

35+69 21' LT

35+58.88 8.59' RT

35+30.00
24.07' RT
TEMPORARY
10'X10' INLET

35+80.57 33.50' RT
L= 10.0' D= 10.11'
45.36 TC

35+41.06 83.50' RT

35+12, 91.0' RT
51.0 TOP OF BERM

36+04, 91' RT
50.0 TOP OF BERM GRADE BREAK

24"SD
72"SD
48"SD
8"S
24"W (3550)
(FUT 3665)
12"W (3550)
16"W (3550)
(FUT 3665)

SDMH #12
SDMH #11
SMH #3 36+31.08 02.87 LT
SMH #4 38+92 03.24 RT

10+00.00 SUNCREEK RD.

36+43.14 CROSSBRIDGE DRIVE

36+18.50 50.75' RT

36+18.50 21' LT

36+32.59 21.00' LT

36+76.33 24.50 LT

37+65.6± 24.40' RT

37+78.1± 24.50' RT

37+83 29.50 LT

37+87.49 24.50 LT

37+89.6 24.50 LT

38+04.40 24.50 LT

38+20

37+27.99 22.79' RT 24"x6" TEE

37+63.39 24.36' RT

37+27 36' RT

37+58 29.50 RT

36+75 17.16' RT

37+62.82 49.87' RT 33.00 INV

37+88.61 49.94' RT 33.00 INV

FUT. 35'X28' LVVWD EASEMENT

FUT. 12" PRV

TEMPORARY 24"W (3550)

24"W(3550) (FUT 3665)

FUTURE 15' PUBLIC DRAINAGE ESMT.

TEMPORARY DIVERSION BERM

184.69' @ 1.08%

80' @ 1.25%

80.44' @ 1.25%

Δ=24°54'14"
R=609.00'
L=264.71'
T=134.48'

3665 PZ (FUTURE)
3550 PZ

38+16.26, 91.0' RT
48.0 TOP OF BERM PT, GRADE BREAK

38+45.44 21.33' RT

MATCHLINE STATION 39+00 SEE SHEET U2

MATCH LINE SEE SHEET U8
SUNCREEK ROAD
10+46.17, 13.00' RT = 13
CROSSBRIDGE DRIVE
36+55.34, 46.28' LT
Δ=9°05'56"
R=724.50'
L=115.06'
T=57.65'
UDACS 2.06.03

VILLAGE 24
PARCEL C
APN 137-22-000-015

Δ=16°43'05"
R=724.50'
L=211.40'
T=106.46'
UDACS 2.06.03

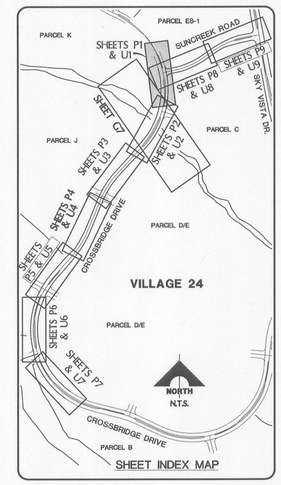
LIMIT OF ROUGH GRADING

LIMIT OF ROUGH GRADING

VILLAGE 24
PARCEL K
APN 137-22-000-015

NORTH

SCALE: 20 0 20 40 FEET



SHEET INDEX MAP

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APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE
(PROJECT # 114100)

CROSSBRIDGE DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

35+69.00 END ROUGH GRADING
BEGIN ROAD IMPROVEMENTS
SEE SHEET G6

EXISTING GROUND @ ℄
FUTURE DESIGN GRADE @ ℄
ROUGH GRADE @ ℄ [−0.94%]

TEMPORARY DRAINAGE INLET SEE SHEET G6

100-YEAR HGL

35+59, 21' LT
37.16 INV 24"W
3550 (FUT 3665)

35+69, 21' LT
37.07 INV 24"W
3550 (FUT 3665)
BEGIN PRESSURE CLASS 300

35+30, 24.07' RT
32.96 INV 72"SD

60.22 LF ~ 72" CLASS III RCP @ −1.0% Q_{100} = 253 cfs

35+58.88, 8.59' RT
29.36 INV 8"S

72.78 LF ~ 8" PVC PUBLIC SEWER @ −2.0%

35+91.71, 17.50' RT
34.36 INV IN 48"SD (W)
32.36 INV IN 72"SD (N)
32.36 INV OUT 72"SD (E)

36+00, 21' LT
38.24 INV 24"W
3550 (FUT 3665)
1.5° MAX. VERT. DEFLECTION ∡

36+32.59, 21' LT
38.24 INV 24"W
3550 (FUT 3665)
ROT. HORIZ. BEND 4°30'34"VERTICALLY

36+43.14 = 10+00
SUNCREEK RD. ℄
3445.07 DG/GB

SDMH # 11
45.2± TMH

SMH # 3
45.1± TMH

36+18.5
21' LT

CLASS 300
24" DIP 3550 W (FUT 3665)

CLASS 300

36+16.07, 21' LT AT 24"WATER CROSSING

30.99 INV 72"SD

36+31.08, 2.87' LT
27.90 INV IN 8"S
27.70 INV OUT 8"S

24" DIP 3550 W (FUT 3665): INSTALL RESTRAINED JOINTS FROM STATION 35+59 TO STATION 37+65.6

24" DIP 3550 WATER: INSTALL RESTRAINED JOINTS FROM STATION 36+55.34 TO STATION 37+89.6

16" DIP 3550 W (FUT 3665): INSTALL RESTRAINED JOINTS FROM STATION 37+65.6 TO STATION 39+42

36+55.34, 46.28' LT
= 10+46.17, 13' RT, SUNCREEK RD. HORIZ. ∡ PT, 31.90 INV 24"W (3550)

36+75, 17.16' RT
33.73 INV 24"W 3550 (FUT. 3665)
ROTATE HORIZ. BEND 3°56'12" VERTICALLY, END PRESSURE CLASS 300

24" DIP 3550 W (FUT 3665)

33.96 INV 6"W (FH)
33.21 INV 24"W
3550 (FUT 3665)

24" DIP 3550 WATER

36+76.33, 24.50' LT
HORIZ. ∡ PT, 32.05 INV 24"W (3550)

37+63.39, 24.36' RT
32.87 INV 24"W TEE
3550 (FUT 3665)

37+78.1±, 24.50' RT
36.80 INV 16"W
3550 (FUT. 3665)

37+65.6±, 24.40' RT
33.18 INV 16"W, 32.85 INV 24"W
3550 (FUT 3665)

37+87.49, 24.50' LT
32.63 INV 24"W TEE (3550)

37+89.6±, 24.5' LT
33.14 INV 12"W
32.64 INV 24"W (3550)

38+04.40, 24.50' LT
37.96 INV 12"W (3550)

12" DIP 3550 WATER

16" DIP 3550 WATER (FUT 3665)

38+45.44, 21.33' RT
HORIZ. ∡ PT, 36.17 INV 16"W
3550 (FUT 3665)

259.41 LF ~ 8" PVC PUBLIC SEWER @ −1.0%

38+92, 3.24' RT
25.11 INV IN 8"S
24.91 INV OUT 8"S

EX. GROUND @ ℄ (TYP)
FUTURE DESIGN GRADE @ ℄ (TYP)
DESIGN GRADE @ ℄ (TYP)

(3452.9) [3447.36]
(3453.9) [3446.89]
(3452.0) [3446.42]
(3448.7) [3445.95]
(3445.0) 3445.48
(3438.5) 3445.01
(3437.5) 3444.54
(3435.3) 3444.07
(3435.9) 3443.60
(3433.7) 3443.13
(3434.9) 3442.66

34+00 35+00 36+00 37+00 38+00 39+00

3450 3445 3440 3435 3430 3425

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CLARK COUNTY TRAFFIC OPERATIONS AND
1-702-229-6611
LAS VEGAS AREA COMPUTERIZED TRAFFIC SYSTEM

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1-702-227-2929

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1-800-227-2600
UNDERGROUND SERVICE (USA) AND
CLARK COUNTY TRAFFIC OPERATIONS
1-702-455-7544

ENGINEER - STATE OF NEVADA
VICKI D. MARJERRISON
CIVIL
No. 13019
PROFESSIONAL ENGINEER
DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GOV APP

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:51:30

G.C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
1555 S. RAINBOW BOULEVARD - LAS VEGAS, NV 89146
T: 702.804.2000 - F: 702.804.2299 - GCWALLACE.COM
LAS VEGAS - SACRAMENTO - RENO

SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
CROSSBRIDGE DRIVE
UTILITY PLAN AND PROFILE 1

DRAWING U1
30 OF 82 SHTS

CLV DRAWING NO. XXXXX

emar jenkon

F:\Projects\600\62024-221\DWG\Production\Unit2 TDS Plans\24x36x101-30.dwg

gcw2436.dwg,060712.ctb

VILLAGE 24
PARCEL C
APN 137-22-000-015

VILLAGE 24
PARCEL D/E
APN 137-22-000-015

VILLAGE 24
PARCEL K
APN 137-22-000-015

VILLAGE 24
PARCEL J
APN 137-22-000-015

MATCHLINE STATION 39+00 SEE SHEET U1

MATCHLINE STATION 44+00 SEE SHEET U3

FOR GRADING PLAN SEE SHEET G7

FOR GRADING PLAN SEE SHEET G7

LIMIT OF ROUGH GRADING

FUTURE 30' LVVWD ESMT.

FUTURE 15' PUBLIC SEWER ESMT.

FUTURE 15' PUBLIC DRAINAGE ESMT.

FUTURE 15' PUBLIC SEWER ESMT.

39+73.50 CROSSBRIDGE DR.

10+00 POSSIBLE FUTURE PARCEL ENTRY

39+06 33.50' LT L= 5.0' D=8.53' 42.30 TC

Δ=16°43'05" R=724.50' L=211.40' T=106.46' UDACS 2.06.03

39+91.74 24.50' LT 36.19 INV 12" 3550 WATER −0.94%

39+91.74 67.50' LT 36.19 INV

39+91.74 24.50' LT

12"W (3550)

24"SD

16"W (3550) (FUT 3665)

SDMH # 1 42.2± TMH

SMH # 5 42.2± TMH

39+55.50 0' RT

39+75.77 21.79' RT

8"S S 08°10'09" W 61.42'

Δ=11°11'04" R=714.00' L=139.38' T=69.91'

Δ=19°15'22" R=724.50' L=243.49' T=122.90' UDACS 2.06.03

COS-1

COS-2

40+64.88 44.40' LT 27.00 INV 5'x4' RCB

40+76.65 44.40' LT 27.00 INV 5'x4' RCB

41+12.83 44.40' LT 27.00 INV 5'x4' RCB

41+24.70 44.40' LT 27.00 INV 5'x4' RCB

41+61.14 44.40' LT 27.00 INV 5'x4' RCB

41+73.08 44.40' LT 27.00 INV 5'x4' RCB

41+91, 96.77' LT CULVERT HEADWALL PER N.D.O.T. R=2.5.1 27.00' INV 24"SD

42+11 33.50'LT L= 5.0' D=11.00' 39.72 TC

42+27 36.00' LT

42+27 24.50' LT

42+75

Δ=9°21'38" R=724.50' L=118.36' T=59.31' UDACS 2.06.03

43+42.35 PT 23.90' LT

251.97' N45°27'03"E

42+26.22 21.79' RT

42+11 33.50'RT L= 5.0' D=9.82' 39.72 TC

41+00.99 21.79' RT

40+81.10 44.61' RT 29.00 INV 5'x4' RCB

40+25.51 44.61' RT 29.00 INV 5'x4' RCB

39+22 83.50' RT

39+08.0, 84.5' RT, 45.0 TOP OF BERM

40+39.19 44.61' RT 29.00 INV 5'x4' RCB

40+94.78 44.61' RT 29.00 INV 5'x4' RCB

41+36.67 44.61' RT 29.00 INV 5'x4' RCB

41+50.35 44.61' RT 29.00 INV 5'x4' RCB

5'x4' RCB

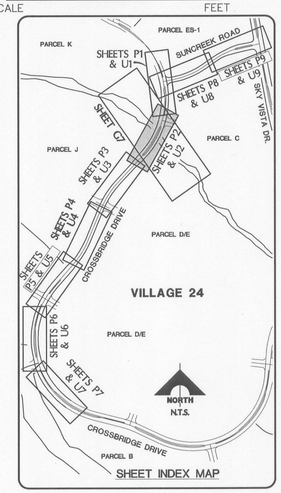
24"SD

13 SD

11 SD

NORTH

SCALE 20 0 20 40 FEET



SHEET INDEX MAP

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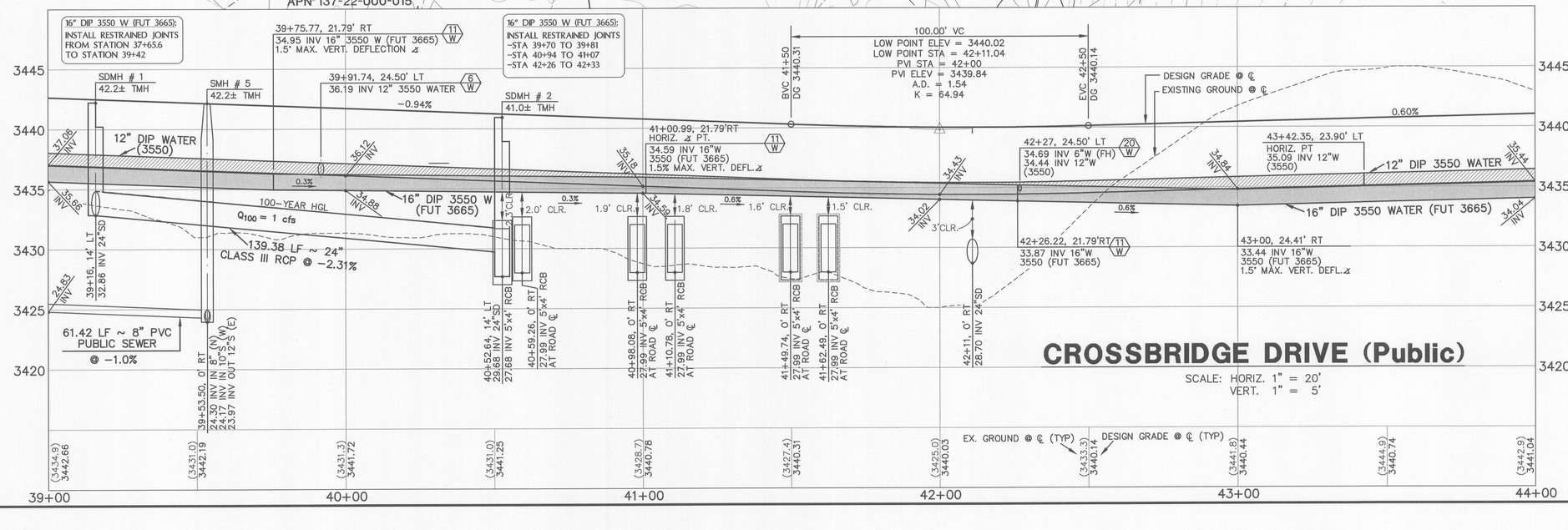
Avoid cutting underground utility lines. It's costly. Call before you Dig. 1-800-227-2600 UNDERGROUND SERVICE (USA) AND CLARK COUNTY TRAFFIC OPERATIONS 1-702-455-7544

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE
(PROJECT # 114100)



DATE	DESCRIPTION	AGEN APP	DATE	GCW APP
5-14-14	TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION			

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:52:01

G.C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
1555 S. RAINBOW BOULEVARD - LAS VEGAS, NV 89146
T: 702.804.2000 - F: 702.804.2299 - GCWALLACE.COM
LAS VEGAS - SACRAMENTO - RENO

SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

CROSSBRIDGE DRIVE
UTILITY PLAN AND PROFILE 2

DRAWING U2
31 OF 82 SHTS

CLV DRAWING NO. XXXXX

emarjerrison

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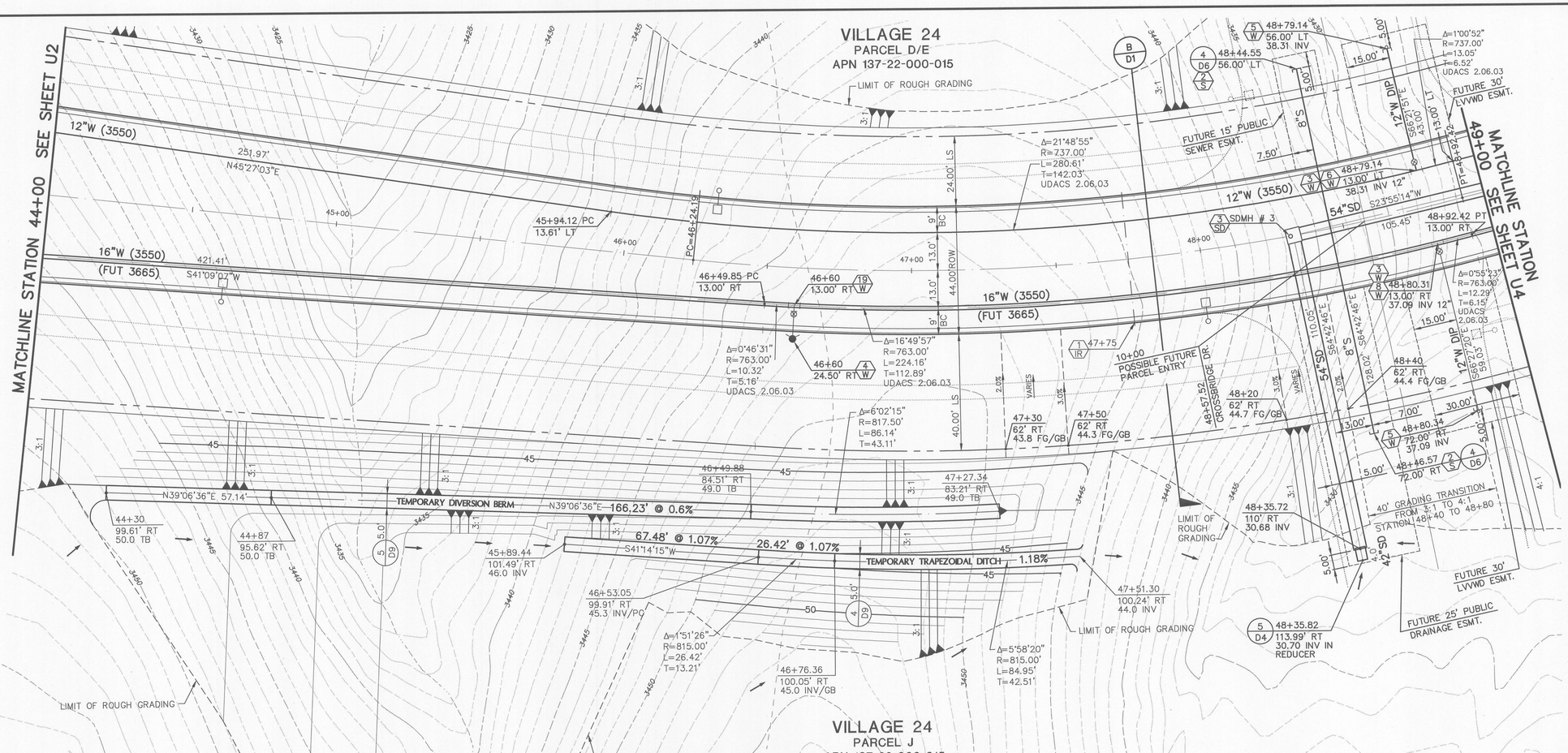
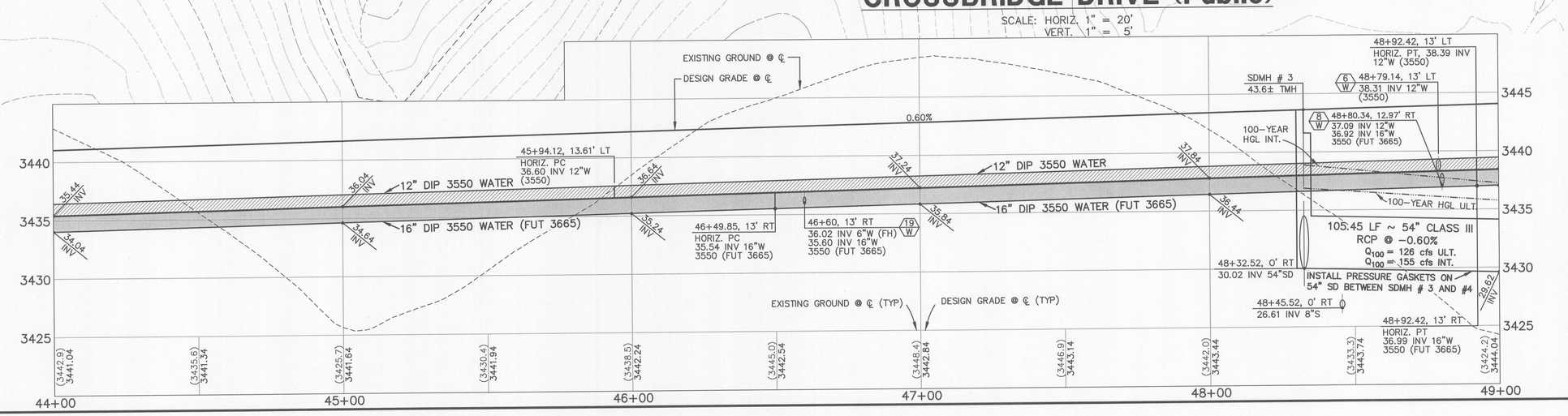
cov2436.dwg 050712.dn





NOTE

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BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM NO. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

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1-800-227-2600
UNDERGROUND SERVICE (USA) AND
CLARK COUNTY TRAFFIC OPERATIONS
1-702-455-7544

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE
(PROJECT # 114100)

VICKI D. MARJERRISON
Exp. 12/31/2015
CIVIL
No. 8009
PROFESSIONAL ENGINEER - STATE OF NEVADA
DATE: 5-14-14

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GOV APP
		TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION				

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:52:32

G.C. WALLACE COMPANIES
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SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
CROSSBRIDGE DRIVE
UTILITY PLAN AND PROFILE 3

DRAWING U3
32 OF 82 SHTS

CLV DRAWING NO. XXXXX

emorjerrison
F:\Projects\600\62024-221\DWG\Production\Unit2 TDS Plans\24U2pU03-32.dwg
cpw24U2.dwg,060712.ctb

✱REDUCED PRESSURE PRINCIPLE ASSEMBLY (RPPA) (1) 1 1/2"

APPROVED RPPA(S) SHALL BE INSTALLED PER THE DISTRICT STANDARD PLATE NO 11A. PRE FINISHED HYDRO COWL BACK FLOW ENCLOSURES WITH A FINISHED COLOR OF SIERRA TAN, MODEL 2005-AK, (OR LVVWD APPROVED EQUAL BY ENGINEER) SHALL BE USED FOR 1 1/2" RPPA'S. NO WATER SHALL BE TAKEN FROM A SERVICE REQUIRING BACKFLOW PREVENTION UNTIL THE RPPA HAS BEEN SUCCESSFULLY TESTED BY THE LVVWD. ANY BLOCK WALL OR OTHER FENCE MATERIAL SHALL BE DESIGNED AND CONSTRUCTED AROUND THE OUTSIDE OF THE EASEMENT(S), SO AS TO ALLOW THE DISTRICT ACCESS FROM THE ADJACENT RIGHT-OF-WAY.

VILLAGE 24
PARCEL D/E
APN 137-22-000-015

MATCHLINE STATION 49+00 SEE SHEET U3

MATCHLINE STATION 54+00 SEE SHEET U5

49+33 22.00' LT (6/D4) (7/SD)
L= 5.0' D=7.44'
44.16 TC

49+29 22.00' RT (6/D4) (7/SD)
L= 5.0' D=9.42'
44.14 TC

B/D1

51+60.0 (4) 24.50' LT W

51+60 (20/W) 13.00' LT

52+09.61 PC 13.83' LT

52+50 (2/W) 15.66' RT

53+60.43 (23/W) 20.91 LT

1 1/2" IRR METER (23/W) AND RPPA ✱SEE NOTE THIS SHEET

LIMIT OF ROUGH GRADING

Δ=19°01'21" R=761.00' L=252.66' T=127.50' UDACS 2.06.03

Δ=19°01'20" R=750.00 L=249.00 T=125.66

Δ=19°57'05" R=737.00' L=256.64' T=129.63' UDACS 2.06.03

53+50 (1/IR)

BRASS

RP-A

12"W (3550)

16"W (3550) (FUT 3665)

54"SD

54"SD (BEVELLED PIPE)

24"SD

SDMH # 4 (3/SD)

SDMH # 5 (3/SD)

267.58' N22°37'17"E

20.62' N81°24'54"W

259.20' S22°37'17"W

236.63' S22°37'17"W

21.93' S43°09'03"E

50.24' N22°37'17"E

51+74.63 PC

51+51.62 PC 13.00' RT

24.00' LS

40.00' LS

44.00' ROW

9' BC

13.0'

STATION 52+00
END 4:1 GRADING
BEGIN 3:1 GRADING

TEMPORARY TRAPEZOIDAL DITCH

45

0.96%

40

4 (D9)

Δ=6°59'10" R=664.50' L=81.02' T=40.56'

LIMIT OF ROUGH GRADING

53+18.88 89.73' RT 40.0 INV

VILLAGE 24
PARCEL J
APN 137-22-000-015

MATCHLINE STATION 54+00

3:1

4:1

3420 3425 3430 3435 3440 3445

CROSSBRIDGE DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

16" DIP 3550 W (FUT 3665): INSTALL RESTRAINED JOINTS FROM STATION 50+86 TO STATION 54+14

100.00' VC
HIGH POINT ELEV = 3445.69
HIGH POINT STA = 52+00
PVI STA = 52+00
PVI ELEV = 3445.84
A.D. = -1.20
K = 83.33

BVC 51+50 DG 3445.54

EVC 52+50 DG 3445.54

SDMH # 4 44.3± TMH

SDMH # 5 45.7± TMH

0.60%

-0.60%

100-YEAR HGL INTERIM

100-YEAR HGL ULTIMATE

12" DIP 3550 WATER

16" DIP 3550 WATER (FUT 3665)

(20/W) 51+60, 13' LT 40.24 INV 6"W (FH) 39.99 INV 12"W (3550)

51+51.62, 13' RT HORIZ. PC 38.55 INV 16"W 3550 (FUT 3665)

52+09.61, 13.83' LT HORIZ. PC 40.08 INV 12"W (3550)

52+50, 15.66' RT (2/W) 38.54 INV 16"W

53+60.43 (23/W) 20.91 LT

DESIGN GRADE @ ℄

EXISTING GROUND @ ℄

39.44 INV
39.04 INV
39.64 INV
40.09 INV
38.69 INV
38.24 INV
37.64 INV
37.04 INV

49+38, 0' RT
31.89 INV IN 24"SD
29.39 INV 54"SD
28.82 INV

INSTALL PRESSURE GASKETS ON 54" SD BETWEEN SDMH # 3 AND # 4.

236.63 LF ~ 54" CLASS III RCP @ -0.60%
Q_{100} = 126 cfs ULTIMATE
Q_{100} = 155 cfs INTERIM

51+74.63, 0' RT
27.97 INV 54"SD

249 LF ~ 54" CLASS III RCP @ -0.60% (BEVELLED PIPE)
Q_{100} = 126 cfs ULTIMATE
Q_{100} = 155 cfs INTERIM

26.62 INV

EXISTING GROUND @ ℄ (TYP)

DESIGN GRADE @ ℄ (TYP)

| | | |

VILLAGE 24
PARCEL D/E
APN 137-22-000-015

MATCHLINE STATION 54+00 SEE SHEET U4

MATCHLINE STATION 59+00 SEE SHEET U6

LIMIT OF ROUGH GRADING

Δ=19°01'21"
R=761.00'
L=252.66'
T=127.50'
UDACS 2.06.03

12"W (3550)

Δ=19°01'20"
R=750.00
L=249.00
T=125.66

54"SD

BEVELLED PIPE

SDMH # 6

16"W (3550)
(FUT 3665)

54+13.55 PT
20.53' RT

Δ=19°57'05"
R=737.00'
L=256.64'
T=129.63'
UDACS 2.06.03

54+56.65 PT
24.50' LT

267.57'
N41°38'37"E

SDMH # 27

54"SD

S46°23'57"W 153.64'

235.01'
S42°34'22"W

N40°44'43"E 154.60'

SDMH # 7

54"SD

56+48.81 PC
24.41' RT

56+60
24.50' RT

16"W (3550)
(FUT 3665)

24"SD

FUTURE 15' PUBLIC
DRAINAGE ESMT.

Δ=0°55'01"
R=699.50'
L=11.20'
T=5.60'
UDACS 2.06.03

56+60
36.00' RT

17.50'
N54°17'08"W

10+00
POSSIBLE FUTURE
PARCEL ENTRY

55+51.50
96.62' RT
37.9 INV

56+21
96.80' RT
50.0 TB

56+47.55
97.70' RT
50.0 TB/PC

57+30, 33.50' RT
L= 7.5' D=7.38'
42.36 TC

57+97.34
CROSSBRIDGE DR.

FUTURE 15' PUBLIC
SEWER ESMT.

Δ=13°10'06"
R=699.50'
L=160.77
T=80.74'
UDACS 2.06.03

57+79.54
83.50' RT

S43°02'57"W 138.91' TEMPORARY TRAPEZOIDAL DITCH 0.96%

54+11.07
93.12' RT
39.2 INV/PT

Δ=6°59'10"
R=664.50'
L=81.02'
T=40.56'

55+74.08
92.21' RT
31.17 INV

RIPRAP
D50= 8"
THICKNESS=16"

TEMPORARY
DRAINAGE INLET

56+04.63
110.29' RT
47.0 INV

S41°44'26"W
42.65'

LIMIT OF
ROUGH
GRADING

56+47.28
110.36' RT
47.45 INV/PC

Δ=3°47'49"
R=784.74'
L=52.00'
T=26.01'

56+93.80
109.70' RT
48.0 INV

TEMPORARY DIVERSION BERM

-1.06%

TEMPORARY TRAPEZOIDAL DITCH 0.69%

56+98.15
109.79' RT
48.0 INV

VILLAGE 24
PARCEL J
APN 137-22-000-015

VILLAGE 24
PARCEL I
APN 137-22-000-015

Δ=10°32'58"
R=784.74'
L=144.49'
T=72.45'

58+14.50
101.11' RT
50.0 TB

58+21.73
116.72' RT
47.0 INV

TEMPORARY
DRAINAGE INLET

FUTURE 30' PUBLIC
LVVWD ESMT.

58+19.57
67.50' LT
36.53 INV

57+75.12
67.50' LT

57+26.42
21.35' LT

12"W (3550)

88.26'
N30°23'37"E

58+17.78
24.05' LT

Δ=12°43'57"
R=689.00'
L=153.11'
T=76.87'

(OVERALL)
Δ=21°23'26"
R=689.00
L=257.23
T=130.13

111.11'
N30°23'37"E

Δ=8°39'29"
R=689.00
L=104.12'
T=52.16'
UDACS 2.06.03

SDMH # 28

54"SD (BEVELLED PIPE)

16"W (3550)
(FUT 3665)

24"SD

58+15.15
24.50' RT
35.32 INV 12"

Δ=38°36'33"
R=699.50'
L=471.36'
T=245.03'
UDACS 2.06.03

FUTURE 15' PUBLIC
DRAINAGE ESMT.

FUTURE 30'
LVVWD ESMT.

57+79.54
83.50' RT

FUTURE 15' PUBLIC
SEWER ESMT.

RIPRAP
D50= 8"
THICKNESS=16"

58+80
103.50' RT
27.65 INV IN

TEMPORARY
DRAINAGE INLET

CROSSBRIDGE DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

SDMH # 6
44.5± TMH

SDMH # 27
43.3± TMH

SDMH # 7
42.4± TMH

SDMH # 28
41.5± TMH

DESIGN GRADE @ ℄

EXISTING GROUND @ ℄

54+56.65, 24.50' LT
HORIZ. PT
38.70 INV 12"W
(3550)

12" DIP 3550 WATER

16" DIP 3550 W (FUT 3665)

56+48.81, 24.41' RT
HORIZ. PC
36.14 INV 16"W
3550 (FUT 3665)

56+60, 24.50' RT
36.50 INV 6"W (FH)
36.08 INV 16"W
3550 (FUT 3665)

57+26.42, 21.35' LT
37.08 INV, 12"W
(3550)

57+77.34, 0' RT
30.34 INV 8"S

58+17.78, 24.05' LT
36.53 INV 12"W
(3550)

58+15.15, 24.50' RT
35.32 INV 12"W
35.15 INV 16"W
3550 (FUT 3665)

100-YEAR HGL INTERIM

100-YEAR HGL ULTIMATE

100-YEAR
HGL INTERIM

100-YEAR
HGL ULTIMATE

153.64 LF ~ 54" CLASS III RCP @ −0.60%
Q_{100} = 126 cfs ULTIMATE
Q_{100} = 155 cfs INTERIM

154.60 LF ~ 54" CLASS III RCP @ −0.60%
Q_{100} = 126 cfs ULTIMATE
Q_{100} = 155 cfs INTERIM

153.11 LF ~ 54" CLASS III RCP @ −0.60% (BEVELLED PIPE)
Q_{100} = 134 cfs ULTIMATE
Q_{100} = 155 cfs INTERIM

54+13.55, 20.53' RT
HORIZ. PT, 37.56 INV
16"W 3550 (FUT 3665)

54+23.63, 0' RT
26.48 INV 54"SD

55+76.75, 12.74' RT
28.06 INV IN 24"SD
25.56 INV 54"SD

57+30, 14' RT
27.13 INV IN 24"SD
24.63 INV 54"SD

58+80, 14' RT
26.21 INV IN 24"SD
23.71 INV 54"SD

Q_{100} = 142 cfs ULT.

Q_{100} = 158 cfs ULT.

EXISTING GROUND @ ℄ (TYP)

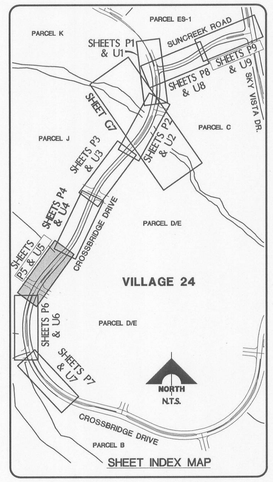
DESIGN GRADE @ ℄ (TYP)

(3436.8) 3444.64 | (3435.0) 3444.34 | (3435.2) 3444.04 | (3433.8) 3443.74 | (3435.0) 3443.44 | (3442.6) 3443.14 | (3442.1) 3442.84 | (3440.0) 3442.54 | (3439.8) 3442.24 | (3437.7) 3441.94 | (3429.0) 3441.64

54+00 | 55+00 | 56+00 | 57+00 | 58+00 | 59+00

NORTH

SCALE: 20 0 20 40 FEET



SHEET INDEX MAP

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BASIS OF BEARINGS

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APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE
(PROJECT # 114100)

CLV DRAWING NO. XXXXX

ENGINEER - STATE OF NEVADA
VICKI D. MAR-JERRISON
No. 10757
PROFESSIONAL
CIVIL
No. 13019
DATE: 5-14-14

REV	DATE	DESCRIPTION	AGEN APP	DATE	GCW APP

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

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SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
CROSSBRIDGE DRIVE
UTILITY PLAN AND PROFILE 5

DRAWING
U5
34 OF 82 SHTS

emorjerrison
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cpw2436.dwg 080712.tm

VILLAGE 24
PARCEL D/E
APN 137-22-000-015

SEE SHEET U5

SEE SHEET U7

MATCHLINE STATION 59+00

MATCHLINE STATION 64+00

LIMIT OF ROUGH GRADING

59+31.11 10.58' LT 12 W

111.11' N30°23'37"E

12"W (3550)

206.28' N06°53'37"E

3 SD SDMH # 8

16"W (3550) (FUT 3665)

54"SD (BEVELLED PIPE)

67.00'ROW

24.00' LS

40.00' LS

Δ=38°36'33" R=699.50' L=471.36' T=245.03' UDACS 2.06.03

Δ=8°39'29" R=689.00' L=104.12' T=52.16'

Δ=26°39'11" R=689.00' L=320.51' T=163.21'

11 W 61+42.89 20.64' LT

4 W 61+60 36' LT

17.80' N05°36'23"W

61+61.19 20 W 22.34' LT

116.86' N05°36'23"W

11 W 62+82.14 21.50' LT

1 IR 62+75

7 SD 8 D4 62+91 34.09' LT L= 10.0' D=7.75' 36.64 TC

D D1

95.04' N17°51'23"W

Δ=11°12'16" R=689.00' L=134.74' T=67.58'

2 D7 6 W 63+80.61 25.70' LT

12"W DIP

POSSIBLE FUTURE PARCEL ENTRY

510+00

POSSIBLE FUTURE DRIVE

24"SD

N 74°46'28" E 46.35'

19 W 62+70 24.50' LT

3 SD SDMH # 9

18.25' N 85°39'45" W

63+42.63 24.50' RT 14 W

7 W 15.00'

4 W 62+70 36.00' RT

1 IR 62+75

7 SD 8 D4 62+91 33.50' RT L= 10.0' D=8.58' 36.65 TC

Δ=6°09'54" R=699.50' L=75.26' T=37.67' UDACS 2.06.03

55.87' N72°14'18"E

5 W 63+43.91 80.30' RT 28.20' INV FUTURE 63' LVVWD ESMT.

2 D7 5 W 63+78.05 72.36' RT

LIMIT OF ROUGH GRADING

COS-3

VILLAGE 24
PARCEL I
APN 137-22-000-015

60+55 106.13' RT 51.0 TB

Δ=10°39'30" R=789.01' L=146.77' T=73.60'

TEMPORARY DIVERSION BERM

TEMPORARY TRAPEZOIDAL DITCH 1.05%

4 D9 60+90 117.64' RT 49.0 INV IN

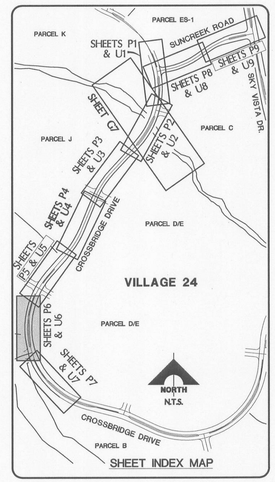
Δ=8°18'47" R=799.01' L=115.93' T=58.07'

61+88 125.58' RT 47.78 INV OUT

FUTURE (3)12'x16' RCB

NORTH

SCALE 20 0 20 40 FEET



SHEET INDEX MAP

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APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE
(PROJECT # 114100)

CROSSBRIDGE DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

SDMH # 8
40.9± TMH

59+31.11, 10.58' LT 12 W
35.85 INV 12"W (3550)

12" DIP 3550 WATER

16" DIP 3550 WATER (FUT 3665)

100-YEAR HGL ULTIMATE

100-YEAR HGL INTERIM

104.12 LF ~ 54" CLASS III RCP @ -0.60% (BEVELLED PIPE)
Q_{100} = 142 cfs ULTIMATE
Q_{100} = 158 cfs INTERIM

59+82, 14' RT
23.08 INV 54"SD

BVC 61+00
DG 3440.44

11 W 61+42.89, 20.64' LT
34.46 INV 12"W (3550)

320.51 LF ~ 54" CLASS III RCP @ -0.60% (BEVELLED PIPE)
Q_{100} = 142 cfs ULTIMATE
Q_{100} = 155 cfs INTERIM

EXISTING GROUND @ ℄ (TYP)
DESIGN GRADE @ ℄ (TYP)

600.00' VC
PVI STA = 64+00
PVI ELEV = 3438.64
A.D. = -7.70
K = 77.89

EXISTING GROUND @ ℄
DESIGN GRADE @ ℄

61+61.19, 22.34' LT 20 W
34.48 INV 6"W (FH)
34.23 INV 12"W (3550)

11 W 62+82.14, 21.50' LT
31.61 INV 12"W (3550)

12" DIP 3550 WATER

16" DIP 3550 W (FUT 3665)

19 W 62+70, 24.50' RT
30.98 INV 6"W (FH)
30.56' INV 16"W
3550 (FUT 3665)

62+96, 14' RT
23.66 INV IN 24"SD
21.16 INV 54"SD

134.74 LF ~ 54" CLASS III RCP @ -1.0% (BEVELLED PIPE)
Q_{100} = 153 cfs ULTIMATE
Q_{100} = 155 cfs INTERIM

SDMH # 9
36.5± TMH

16" DIP 3550 W (FUT 3665): INSTALL RESTRAINED JOINTS FROM STA 61+78 TO STA 63+43.91, 80.3 RT

6 W 63+80.61, 25.70' LT
28.10 INV 12"W (3550)

14 W 63+42.63, 24.50' RT
28.20 INV 16" 3550 W (FUT 3665)

100-YEAR HGL INTERIM

100-YEAR HGL ULTIMATE

(3429.0) 3441.64	(3427.4) 3441.34	(3433.5) 3441.04	(3439.2) 3440.74	(3435.6) 3440.44	(3438.9) 3439.98	(3442.9) 3439.19	(3441.8) 3438.09	(3437.8) 3436.67	(3432.9) 3434.92	(3429.2) 3432.86
59+00	60+00	61+00	62+00	63+00	64+00					

CLV DRAWING NO. XXXXX

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:54:04

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

ENGINEER - STATE OF NEVADA
VICKI D. MARJERRISON
No. 13078
PROFESSIONAL
DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

G.C. WALLACE COMPANIES
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SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

CROSSBRIDGE DRIVE
UTILITY PLAN AND PROFILE 6

DRAWING U6
35 OF 82 SHTS

emorjerrison

F:\Projects\600\62024-22\1\DWG\Production\Unit2 TDS Plans\24U2cu06-35.dwg

cow2436.dwg 080712.rm

VILLAGE 24
PARCEL D/E
APN 137-22-000-015

MATCHLINE STATION 64+00
SEE SHEET U6

LIMIT OF ROUGH GRADING

12"W (3550)
54"SD (BEVELLED PIPE)
Δ=11°12'16"
R=689.00'
L=134.74'
T=67.58'
113.67' N17°51'23"W

64+40 (1 IR)
64+96.96 (12 W) 12.60' LT
66+51.21 (20 W) 26.88' LT
67+55.57 (11 W) 17.04' LT
67+87.50 (22 W) 17.69' LT
68+03 (15 W)

12"W (3550) N41°21'23"W 150.09'
12"W (3550) N41°21'23"W 101.33'
12"W (3550) N53°53'38"W 31.12'

SDMH # 10 (3 SD)
64+40 (1 IR)
54"SD
7.50'
66.00'
N 66°27'59" E
FUTURE 15' PUBLIC DRAINAGE ESMT.
CULVERT HEADWALL PER N.D.O.T. R-2.5.2
64+28 (9 D4) 110.00' RT 17.89 INV OUT
RIPRAP D50= 21" THICKNESS=42"
LIMIT OF ROUGH GRADING

24.00' LS
9' BC
8' EC
72.00'ROW
6"W
24.00'
66+50 (4 W) 38.50' RT

EXISTING 68+48.95, 36' LT L=5.0 D=8.33' (01.01) TC
EXISTING 68+48.95, 36' RT L=5.0 D=6.5' (01.01) TC
COMMON LOT
EX. 24"SD
EX. 16"W (3550) XC 9867
EX. 4"G
EX. SDMH
EX. 24"SD
(72.00' ROW)
COMMON LOT

FOR EX. IMPROVEMENTS, SEE:
"VILLAGE 24 UNIT 1 IMPROVEMENTS"
By G. C. WALLACE, INC.
JOB # 62A.24.211
CITY OF LAS VEGAS # 107-Y4932

68+00 LIMIT OF ROAD IMPROVEMENTS MATCH EXISTING

VILLAGE 24
PARCEL B
APN 137-22-000-014

VILLAGE 24
COS-4

CROSSBRIDGE DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

INSTALL RESTRAINED JOINTS ON 12" & EX. 16" DIP 3550 WATER FROM STA. 66+39 TO STA. 69+67

SDMH # 10
31.3± TMH
21.28 INV
100-YEAR HGL ULTIMATE
100-YEAR HGL INTERIM
30.10 INV
64+28, 14' RT
19.81 INV 54"SD
64+96.96, 12.60' LT
22.34 INV 12"W (3550)
22.16 INV
12" DIP 3550 WATER
15.79 INV
66+51.21, 26.88' LT
12.28 INV 6"W (FH)
12.03 INV 12"W (3550)
08.13 INV
DESIGN GRADE @ ℄
EXISTING GROUND @ ℄
EVC 67+00 DG 3413.73
EXISTING GROUND @ ℄ (TYP)
DESIGN GRADE @ ℄ (TYP)
(3429.2) 3432.86
(3426.3) 3430.47
(3423.9) 3427.77
(3421.1) 3424.74
(3417.4) 3421.39
(3413.4) 3417.72
(3409.0) 3413.73
64+00 65+00 66+00 67+00

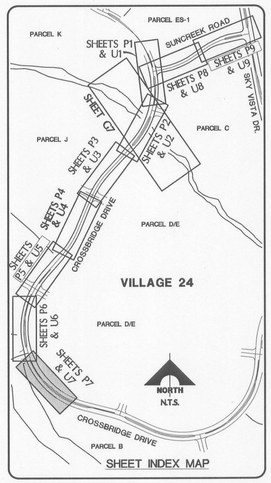
IDENTICAL POINT

INSTALL RESTRAINED JOINTS ON 12" & EX. 16" DIP 3550 WATER FROM STA. 66+39 TO STA. 69+67

EVC 67+00 DG 3413.73
DESIGN GRADE @ ℄
EXISTING GROUND @ ℄
-8.30%
08.13 INV
12" DIP 3550 WATER
67+55.57, 17.04' LT
2.5° MAX. VERT. DEFL. ∡ 03.51 INV 12" 3550 W
67+87.50, 17.69' LT
1.5° MAX. VERT. DEFL. ∡ (99.7±) INV 16" 3550 W
68+03, 17.48' LT
EX. 16" G.V. (3550)
98.6± INV (3550)
EXISTING DESIGN GRADE @ ℄
EX. SDMH #19 99.2±TMH
EX. 16" DIP WATER (3550) XC 9867
68+52.47, 14.46' LT
94.3± INV 16"W (3550 ZONE)
EX. 11.25° BEND
90.3± INV (3550)
100-YEAR HGL
EX.24"SD
68+71.42, 12.83' RT
(84.14) INV
EXISTING GROUND @ ℄ (TYP)
EX. DESIGN GRADE @ ℄ (TYP)
(3409.0) 3413.73
(3405.0) 3409.58
(3401.3) 3405.42
(3397.1) 3401.27
(3394.7) 3397.12
67+00 68+00 69+00

68+00 MATCH EXISTING IMPROVEMENTS

NORTH
20 0 20 40
SCALE FEET



SHEET INDEX MAP

NOTE
THIS SET OF DRAWINGS IS BASED UPON NAVD 88 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM NO. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS
NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

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CLARK COUNTY TRAFFIC OPERATIONS AND
1-702-229-6611
LAS VEGAS AREA COMPUTERIZED TRAFFIC SYSTEM

Avoid cutting underground utility lines. It's costly.
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1-800-227-2600
UNDERGROUND SERVICE (USA) AND
CLARK COUNTY TRAFFIC OPERATIONS
1-702-455-7544

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE
(PROJECT # 114100)

STATE OF NEVADA — VICKI D. MARJERRISON — No. 13579 — PROFESSIONAL ENGINEER — CIVIL
DATE 5-14-14

REV	DATE	DESCRIPTION	DATE AGEN APP	DATE GCW APP

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:54:38

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ENGINEERS | PLANNERS | SURVEYORS
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SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
CROSSBRIDGE DRIVE
UTILITY PLAN AND PROFILE 7

DRAWING U7
36 OF 82 SHTS

CLV DRAWING NO. XXXXX

emorjerrison
F:\Projects\600\62024-221\DWG\Production\Unit2 TDS Plans\24U2cd07-36.dwg
dwg\ASB.dwg,080712.ctb

FUTURE 15' PUBLIC DRAINAGE ESMT.

SEE SHEET G6

VILLAGE 23A
PARCEL K

9+09.96, 89.59' LT (8 SD)
SEE SHEET U1 AND SEE DET. 2 SHEET D4

60.22'
N24°41'19"W

61.72'
N72°30'53"W

48"SD

72"SD

8"S

24"W (3550)

09+63.84 59.50' LT (2 D4, 7 SD)
L= 10.0' D= 10.11'
45.36 TC

48"SD
N72°30'53"W
19.26'
SDMH #11 (1 S2)

9+48.85
22.85' LT (29 W)

10+20.92
10.87' LT (13 W)

SUNCREEK RD.
10+00.00

36+43.14
CROSSBRIDGE DR.

9+82.13
31.07' LT

CROSSBRIDGE DR. (PUBLIC)
SEE SHEET U1

24"W (3550)
(FUT 3665)

10+31.23 58.01' LT = 35+87.73 33.52' LT
CROSSBRIDGE DR. (8 SD, 1 D4)

38.15'
S16°42'12"E

10+34.56
20.00' LT (6 SD)

LIMIT OF ROUGH GRADING

VILLAGE 24
PARCEL ES-1
APN 137-22-000-015

24.00'
N72°30'53"W
SDMH #12 (4 SD)

10+79.44
10.10' LT (6 SD)

10+90 (1 IR)

SMH #3

72"SD
146°31'10"

24.00'

24"SD

10+55.51
8.30' LT (5 SD)

30.78'
S00°22'53"W

N78°18'05"E
55.91'

30.59'
N 34°48'05" E

11+92, 12.52' RT
1.5° MAX VERT DEFL. ∠

11+08.33
13.00' RT
PC

10+73 22.00' RT
L= 5' D= 5.83'
43.56 TC (1 D5, 7 SD)

MATCH LINE
SEE SHEET U1
SUNCREEK ROAD
10+46.17, 13.00' RT = (13 W)
CROSSBRIDGE DRIVE
36+55.34, 46.28' LT

VILLAGE 24
PARCEL C
APN 137-22-000-015

LIMIT OF ROUGH GRADING

SDMH #13 (4 SD)

179.97'
72"SD
S74°00'17"W

161°25'30"

215.82'
N 55°25'48" E

24.00' LS
8.0'
44.00' ROW
19.00' LS
VARIES

Δ=22°52'17"
R=690.00'
L=275.44'
T=139.58'
UDACS 2.06.03

12+61.65 5.55' LT (5 SD)

13+72.47
13.00' RT
PT

9 W 14+13
13.00' RT

4 W 14+23
24.50' RT

RIPRAP
D50= 23"
THICKNESS=46"
17.0 FG

14+59.40 (4 D9)
75.3' LT
17.0 INV

3 D7, 5 W 14+13
56.00' RT

FUTURE 30'
LVVWD ESMT.

15.00'

8" DIP W
S 34°55'52" E
68.00'

4 W 14+23
0' RT

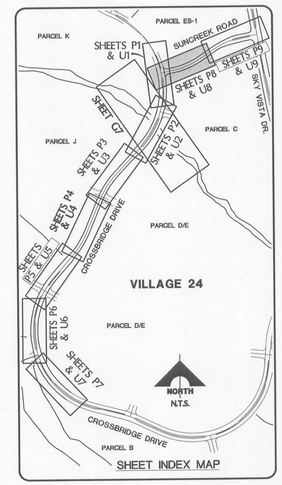
10 W
18 W 14+13
0' RT

6"W

MATCHLINE STATION 14+30
SEE SHEET U9

NORTH

SCALE 20 0 20 40 FEET



SHEET INDEX MAP

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BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

SUNCREEK ROAD (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

10+00 = 36+43.14
CROSSBRIDGE DR. ℄
3445.07 DG/GB

SDMH # 11
45.2± TMH

DROP INLET
45.36 TC

10'

46.5 FG

Q_{100} = 91 cfs
19.26 LF ~ 48"
CLASS III RCP @ −2%

FOR CONTINUATION OF 48"SD, SEE (2 D4)

9+63.84, 59.50' LT = 35+80.57, 33.50' RT
CROSSBRIDGE DR.
34.75' INV 48"SD

9+80.66, 50.10' LT = 35+99.71, 17.50' RT
CROSSBRIDGE DR.
34.36' INV IN 48"SD (W)
32.36' INV IN 72"SD (N)
32.36' INV OUT 72"SD (E)

10+02.76, 12.11' LT
27.90' INV IN 8"S
27.70' INV OUT 8"S

10+20.46, 27.87' LT = 35+67.77, 21' LT
CROSSBRIDGE DR.
10+34.56, 20' LT
32.51' INV IN 24"SD (N)
30.51' INV THRU 72"SD

SMH # 3
45.1± TMH

10+57.72 GB
3443.92 DG

SDMH # 12
43.7± TMH

24" DIP 3550 WATER:
INSTALL RESTRAINED JOINTS FROM STATION 10+46.17 TO STATION 10+62

−2.0%

10+46.17, 13' RT (13 W)
31.90' INV 24"W (3550)

0.5'CLR.

38.24' INV

10+55.51, 8.30' LT (5 SD)
29.79' INV 72"SD
HORIZ. ∠ PT.

10+67.47, 9.20' LT
29.43' INV 72"SD

10+79.44, 10.16' LT (6 SD)
27.07' INV 24"SD
29.07' INV 72"SD

85.73 LF ~ 72" CLASS III
RCP @ −3.0%
Q_{100} = 355 cfs

EXISTING GROUND @ ℄ (TYP)

DESIGN GRADE @ ℄ (TYP)

10+92.08, 13' RT
HORIZ. PC
31.62' INV 24"W (3550)

11+00
31.63' INV

11+92, 12.52' RT
1.5° MAX. VERT. DEFL. ∠
31.17' INV 24"W (3550)

12+00
30.90' INV 24"W

−2.99%

DESIGN GRADE @ ℄

EXISTING GROUND @ ℄

24" DIP WATER (3550)

100-YEAR HGL

0.5%

203.97 LF ~ 72" CLASS III RCP @ −3.0%
Q_{100} = 355 cfs

BVC 11+75
DG 3440.41

250.00' VC
PVI STA = 13+00
PVI ELEV = 3436.67
A.D. = −4.69
K = 53.33

SDMH # 13
37.5± TMH

13+00
26.50' INV 24"W

13+72.47, 13' RT
HORIZ. PT, 22.14' INV 24"W (3550)

24" DIP WATER (3550)

100-YEAR HGL

14+00
20.23' INV

6"W

215.82 LF ~ 72" CLASS III RCP @ −6.40%
Q_{100} = 355 cfs

12+49.67, 7.38' LT
24.03' INV 72"SD

12+61.65, 5.55' LT (5 SD)
23.67' INV 72"SD
HORIZ. ∠ PT.

EVC 14+25
DG 3427.07

14 W 14+23, 0' RT
23.28' INV 6"W (FH)
(3550)

18 W (3550)
14+13, 0' RT
23.28' INV 6"W
23.20' INV 8"W

9 W (3550)
14+13, 13' RT
19.95' INV 8"W
19.28' INV 24"W

17.98' INV

12.99' INV

(3440.9) 3444.96	(3438.9) 3445.07	(3441.1) 3444.07	(3437.1) 3442.65	(3434.3) 3441.16	(3432.2) 3439.60	(3430.4) 3437.64	(3426.1) 3435.21	(3416.7) 3432.30	(3410.1) 3428.93

9+00 10+00 11+00 12+00 13+00 14+00 14+30

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CLARK COUNTY TRAFFIC OPERATIONS
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APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE
(PROJECT # 114100)

CLV DRAWING NO. XXXXX

VICKI D. MARJERRISON
Exp. 12/31/2015
CIVIL
No. 13019
STATE OF NEVADA
PROFESSIONAL ENGINEER
DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:55:08

G.C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
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VILLAGE 24 - UNIT 2 IMPROVEMENTS

SUNCREEK ROAD
UTILITY PLAN AND PROFILE 1

DRAWING
U8
37 OF 82 SHTS

emarjerrison

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gcw2436.dwg 060712.dn

VILLAGE 24
PARCEL ES-1
APN 137-22-000-015

RIPRAP
D50= 23"
THICKNESS=46"
17.0 FG

TEMPORARY TRAPEZOIDAL DITCH

TEMPORARY DIVERSION BERM

16+66, 88.90' LT
16.0 EG, 14.0 INV

81.87 LF @ 14.7%

RIPRAP
D50= 23"
THICKNESS=46"

17+38
90' LT
02.6 EG
02.0 INV

35.36' @ 1.1%

17+70.16
79.68' LT
03.7 FG
01.6 INV

RIPRAP
D50= 8"
THICKNESS=16"

TEMPORARY DRAINAGE INLET

17+95.83
74.97' LT
10'X10' INLET
95.90 INV

FUTURE 15' DRAINAGE ESMT.

14+59.40
75.3' LT
17.0 INV

229.89 LF @ 1.3%

16+22
70.72' LT
16.0 TB

15+78
64.03' LT
17.0 TB

N 59°37'19" E

N 58°16'15" E

49.00'

N 74°20'03" E

S 83°53'53" E

FUTURE 15' SEWER ESMT.

17+60
65.50' LT

17+99.91, 31.50' LT
06.54' TC

17+90

SDMH # 14
14+78.83
PC, 14' LT

SDMH # 15
17+50.33
PT, 14' LT

72"SD (BEVELLED PIPE)

Δ=23°55'57"
R=664.00'
L=277.35'
T=140.73'

15+30.08
11.01 RT
PC

24"W (3550)

116.16'
N 55°25'48" E

Δ=15°24'30"
R=690.00'
L=185.56'
T=93.34'
UDACS 2.06.03

17+20.38
23.52' RT
PT

166.73'
S 79°52'23" W

17+65
24.57' RT

18+08.83
25.67' RT
EXISTING CAP

FUTURE 15' SEWER ESMT.

LIMIT OF ROUGH GRADING

[FUTURE 8"S]

17+60
63.00' RT

18+07, 34' RT
L=10' D=9.32'
04.67' TC

REMOVE 79.34 LF EX 24"W (3550)

24"SD N10°38'15"W

24" DIP W (3550)

72"SD

78"SD

EX. 16"W (3550) XC 9849

EX. 24"W (3550) XC 9849

60"SD

24"SD

SDMH #24

SDMH #16

18+07
14' LT

18+07, 6.33' LT
L=10' D=10.88'
05.80' TC

18+46.80
14.00' LT

SDMH #23
04.6± TMH

341+75.03
SKY VISTA DR.

18+88.20
25.67' RT

EX. 28.6 LF TO REMAIN

18+85
25.64' RT

19+16.83
25.67' RT
EX. 24"TEE

19+20.8±
31.0± RT

SKY VISTA DR. (PUBLIC)

SEE SHEET U14

VILLAGE 23A
PARCEL N
APN 137-34-210-001

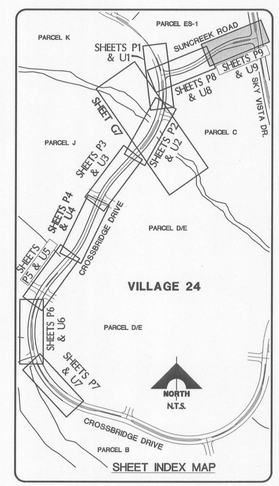
MATCHLINE STATION 14+30 SEE SHEET U8

VILLAGE 24
PARCEL C
APN 137-22-000-015

SUNCREEK RD.

NORTH

SCALE 20 0 20 40 FEET



SHEET INDEX MAP

SUNCREEK ROAD (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

SDMH # 14
22.7± TMH

-7.68%

250.00' VC
PVI STA = 16+75
PVI ELEV = 3407.87
A.D. = 5.68
K = 44.00

BVC 15+50
DG 3417.47

15+00
12.61 INV 24"W

DESIGN GRADE @ ℄

EXISTING GROUND @ ℄

24" DIP 3550 WATER:
INSTALL RESTRAINED JOINTS
-STA 15+24 TO 15+37
-STA 18+02 TO 18+88.2

EVC 18+00
DG 3405.37

17+20.38, 23.52' RT
HORIZ. PT, 98.98 INV
24"W (3550)

SDMH # 15
06.9± TMH

17+65, 24.55' RT
1.5° MAX. VERT.
DEFL. ∡, 97.50 INV
BEGIN 24"W (3550)
PRESSURE CLASS 300

18+43.22
3404.51 DG/GB

18+86.83 = 341+75.03
SKY VISTA DR. ℄
3405.38 DG/GB

FOR EXISTING 3550 WATER, SEE:
"VILLAGE 23B 3550 ZONE
24" WATERLINE - PHASE 2"
By G. C. WALLACE, INC.
REF. # 62A-W04-216
CLV DRAWING # 565-405-PH2

100-YEAR HGL

17.98 INV

12.99 INV

16+00
05.21 INV 24"W

17+00
99.80 INV 24"W

24" DIP WATER (3550) CLASS 250

15+30.08
11.01' RT
10.30 INV 24"W
(3550)

14+78.83, 14' LT
09.86 INV 72"SD
HORIZ. PC

277.35 LF ~ 72" CLASS III RCP @ -5.90% (BEVELLED PIPE)
Q_{100} = 355 cfs

18+08.83. 25.67' RT
REMOVE EX. 24"W
(96.80) INV

REMOVE 79.34 LF
EX. 24" DIP W
(3550)

SDMH # 16
05.5± TMH

SDMH # 23
04.6± TMH

-2.0%

2.0%

80'

24" DIP W (3550)
CLASS 300

Q_{100} = 358 cfs

0.5' CLR

18+85
25.64' RT
97.50 INV 24"W

24"DIP W(3550)
CLASS 300

19+16.83
25.67' RT
(93.42) INV
EX. 24" TEE

19+10.83
25.67' RT
(93.60) INV
EX. BLOW-OFF

18+88.20, 25.67' RT=
341+49.36, 1.37' RT, SKY VISTA
REMOVE 79.34' OF EX. 24"W AND
INSTALL 45° VERT. BEND
(94.32) INV 24"WATER (3550)
END PRESSURE CLASS 300

17+50.33, 14' LT
93.50 INV 72"SD
HORIZ. PT

17+60, 0' RT
89.99 INV 8"S

18+07, 14' LT
94.37 INV 24"SD
92.37 INV 72"SD

18+19, 14' LT
92.13 INV 72"SD

18+46.80, 14' LT
91.57 INV 72"SD
HORIZ. PT

96.49 LF ~ 72" CLASS III
RCP @ -2.0%
Q_{100} = 355 cfs

33.99 LF ~ 72" CLASS III
RCP @ -2.0% Q_{100} = 358 cfs

18+70.83, 10.03' RT =
341+65, 16' LT SKY VISTA
91.89 INV IN 60"SD (N)
90.89 INV IN 72"SD (W)
90.39 INV OUT 78"SD (S)

EXISTING GROUND @ ℄ (TYP)

DESIGN GRADE @ ℄ (TYP)

| | | |

VILLAGE 24
PARCEL A
APN 164-03-111-001

FOR EX. IMPROVEMENTS, SEE:
"VILLAGE 24 UNIT 1 IMPROVEMENTS"
By G. C. WALLACE, INC.
JOB # 62A.24.211
CITY OF LAS VEGAS # 107-Y4932

99+07.56, 42' RT
L=10.0', D=5.25'
(23.20 TC)

EX. 6" PE ISO VALVE
EX 6" PE GAS 31556
EX 6" STL GAS 49619
CAUTION: HIGH PRESSURE GAS

EX. SDMH #5

84.00'

(EX. 24"SD)

EX.16"DIP W (3435)

CROSSBRIDGE DR. (PUBLIC)

EX.16" DIP WATER (3550) XC 9849

EX. 50' LVVWD ESMT.

99+95.25
CROSSBRIDGE DR.
DESERT MOON RD.

321+09.72
SKY VISTA DR.

EX.78"SD

EX.12"PVC W (3435)
XC 8926

FOR EXISTING IMPROVEMENTS, SEE:
VILLAGE 23A/24
"SKY VISTA DRIVE IMPROVEMENTS"
By G. C. WALLACE, INC.
JOB # 62024.220
CITY OF LAS VEGAS # 107-V4292

EX. 24"PVC DR-18 W
XC 8926 (3435)

EX. 24"PVC W
XC 7891

VILLAGE 23A
PARCEL E

FOR EXISTING IMPROVEMENTS, SEE:
THE PASEOS - VILLAGE 23A
UNIT 1 IMPROVEMENTS
By G. C. WALLACE, INC.
JOB # 62023.221
CITY OF LAS VEGAS #107-V3574-1

EX 4" PE GAS

DESERT MOON RD. (PUBLIC)

321+84.78
BEGIN SOUTH BOUND IMPS

321+95, 61.05' LT
L= 5.0' D= 7.32'
25.02 TC

FOR EX. ROUGH GRADING, SEE:
"VILLAGE 23A - ROUGH GRADING
By G. C. WALLACE, INC."
JOB # 62023.010
CITY OF LAS VEGAS # 107-V3574

REMOVE EX. TEMP. DIVERSION BERM & RPRAP

EX. SDMH #6

321+90.27
25.27' LT

EX.24"SD

EX.16" DIP WATER (3550)
XC 9849

EX. 1 1/2" RPPA AND METER
PER CLV # 107-Y4932

322+00, 35.00' RT
L= 12.5' D= 5.86'
23.77 TC

LIMIT OF ROUGH GRADING

321+79.64 ℄ CL
321+80.84 ℄ BC
BEGIN NORTH BOUND IMPS

VILLAGE 23A
PARCEL WS-1
APN 137-34-312-001

COS-2

LIMIT OF ROUGH GRADING

VILLAGE 24
PARCEL C
APN 137-22-000-015

MATCHLINE STATION 324+90 SEE SHEET U11

324+37.53
24.43' LT
PC

324+00±
23.46'± RT

Δ=0°56'56"
R=6007.00'
L=99.48'
T=49.74'

SDMH #17

78"SD

37.74'
N 28°29'20" W

176°28'40"

EX.78"SD

78"SD

VARIES

324+00

35.00'

24.00'

8'±

EX. RPP RAP

NORTH

20 0 20 40
SCALE FEET

VILLAGE 30 VILLAGE 23B
ALTA DRIVE
SHEETS P16 & U16
SHEETS P17 & U17
VILLAGE 23A
PARCEL N
SHEETS P15 & U15
PARCEL E8-1
SHEETS P14 & U14
SUNCREEK ROAD
SHEETS P13 & U13
SKY VISTA DR
PARCEL C
SHEETS P12 & U12
SHEETS P11 & U11
SHEETS P10 & U10
PARCEL D/E
VILLAGE 24
CROSSBRIDGE DR
NORTH N.T.S.
SHEET INDEX MAP

SKY VISTA DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

320+39.73
MATCH EXISTING
19.29 DG

FOR EX. IMPROVEMENTS, SEE:
"VILLAGE 24 UNIT 1 IMPROVEMENTS"
By G. C. WALLACE, INC.
JOB # 62A.24.211
CITY OF LAS VEGAS # 107-Y4932

321+09.72
DESERT MOON RD.
& CROSSBRIDGE DR.
21.39 DG

321+45.32, 83.26' LT, SVD =
99+11.00, 35.50' LT, CD
PC, (12.66) INV

321+79.64 23.49 DG
321+84.78 23.64 DG
MATCH EXISTING
IMPROVEMENTS

FOR EX. ROUGH GRADING, SEE:
"VILLAGE 23A - ROUGH GRADING
By G. C. WALLACE, INC."
JOB # 62023.010
CITY OF LAS VEGAS # 107-V3574

322+02.85, 23.61' LT
PT, (14.06) INV

322+14.78, 23.35' LT
(14.40) INV

EX. SDMH # 6
(25.0±) TMH

323+15 BVC
[27.55 DG]

270.00' VC
PVI STA = 324+50
PVI ELEV = 3331.60
A.D. = 2.20
K = 122.73

REMOVE EXISTING BERM
AND EXISTING TEMPORARY
DRAINAGE INLET

DESIGN GRADE @ ℄
EX. ROUGH GRADE @ ℄

SDMH # 17
31.8± TMH

18.5"

100-YEAR HGL
(100-YEAR HGL)

3.00%

EX. DESIGN GRADE @ ℄

ELASTOMERIC SEALANT

92.15 LF ~
EX. 78" CLASS III
RCP @ 1.52%

EX. 198.19 LF 78" CLASS III RCP @ 2.80%
Q_{100} = 467 cfs

37.74 LF ~
78" CLASS III
RCP @ 2.8%
Q_{100} = 467cfs

21.73
INV

135.21 LF ~ 78"
CLASS III RCP @ 2%
Q_{100} = 467 cfs

EX. 16" DIP WATER (3550 ZONE) XC 9849

EX. 12"W (3435)
(XC 8926)

380+83.11, 28.40' RT
(13.0±) INV 24"W (E)
(13.4±) INV 16"W (W)
(13.5±) INV 12"W (S)
(3435 ZONE)

EX.16"DIP

0.2%

0.5%

321+30.03, 4.14' RT
(12.70) INV 8"W (S)
45° HORIZ. BEND

321+52.90, 27' RT
(12.64) INV 16"W (S)
45° HORIZ. BEND

321+70, 27' RT (3550)
(12.73) INV GATE VALVE

321+75, 27' RT
(12.75) INV 16"W (S)
VERT. ∠ PT

321+90.27, 25.27' LT
(16.12) INV IN 24"SD (E & W))
(15.87) INV THRU 78"SD

FOR EXISTING 3550 WATER, SEE:
"VILLAGE 23B 3550 ZONE
24" WATERLINE - PHASE 2"
By G. C. WALLACE, INC.
REF. # 62A-W04-216
CLV DRAWING # 565-405-PH2

FOR EX. IMPROVEMENTS, SEE:
"VILLAGE 24 UNIT 1 IMPROVEMENTS"
By G. C. WALLACE, INC.
JOB # 62A.24.211
CITY OF LAS VEGAS # 107-Y4932

324+00.00, 23.46' LT
CONNECT TO EX. 78"SD
(19.61) INV

324+37.53, 24.43' LT
20.67 INV 78"SD
HORIZ. PC & VERT. ∠ PT

324+49.46, 24.05' LT
20.91 INV 78"SD

EX. ROUGH GRADE @ ℄ (TYP)
DESIGN GRADE @ ℄ (TYP)

(3318.10) (3319.60) (3321.10) (3322.60) 3324.10 3325.60 3327.10 3328.65 3330.39 (3330.85) 3334.05

320+00 321+00 322+00 323+00 324+00 324+90

Avoid overhead power line contact. It's costly.
CALL BEFORE YOU OVERHEAD
1-702-227-2929

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Call before you UnderGround.
1-702-455-7511
CLARK COUNTY TRAFFIC OPERATIONS
AND
1-702-229-6611
LAS VEGAS AREA COMPUTERIZED TRAFFIC SYSTEM

Avoid cutting underground utility lines. It's costly.
Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE (USA)
AND
CLARK COUNTY TRAFFIC OPERATIONS
1-702-455-7544

NOTE

THIS SET OF DRAWINGS IS BASED UPON NAVD 88 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM NO. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT (PROJECT # 114100) DATE

ENGINEER - STATE OF NEVADA
VICKI D. MARJERRISON
No. 12515/2015
CIVIL
PROJECT ENGINEER
No. 13079
DATE: 5-14-14

REV	DATE	DESCRIPTION	AGEN APP	DATE	GCW APP

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:56:10

G.C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
3555 S. RAINBOW BOULEVARD · LAS VEGAS, NV 89146
T 702.804.2000 F 702.804.2299 · GCWALLACE.COM
LAS VEGAS · SACRAMENTO · RENO

SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
SKY VISTA DRIVE
UTILITY PLAN AND PROFILE 1

DRAWING U10
39 OF 82 SHTS

CLV DRAWING NO. XXXXX

gw2436.dwg 060712.rln

F:\Projects\600\62024-221\DWG\Production\Unit2 TDS Plans\24U2U10-39.dwg
emarjerrison

VILLAGE 24
PARCEL C
APN 137-22-000-015

MATCHLINE STATION 324+90 SEE SHEET U10

MATCHLINE STATION 330+00 SEE SHEET U12

TEMPORARY DRAINAGE INLET (4/D5)
352+69.58, 130.98' LT (4/D9)
46.0 INV DITCH
RIPRAP D50 = 8" THICKNESS=16"
TEMPORARY TRAPEZOIDAL DITCH
N21°58'15"W 435.57 LF @ 4.96%
N21°58'15"W 435.23 LF @ 4.96%
TEMPORARY DIVERSION BERM
RIPRAP D50 = 8" THICKNESS=16"
GRADE BREAK 329+92.88, 128.38' LT
67.6 INV/GB DITCH
1.2%
325+69, 120' LT (5/D9)
48.0 TOP OF BERM
LIMIT OF ROUGH GRADING
LIMIT OF ROUGH GRADING
GRADE BREAK 329+93, 117.37' LT
69.6 TOP OF BERM
325+36.69 (4/D5)
108' LT
5'x5' INLET
33.0 INV
325+49.38 85.28' LT (5/W, 4/D7)
FUTURE 30' LVVWD ESMT.
FOR EX. ROUGH GRADING, SEE: "VILLAGE 23A – ROUGH GRADING By G. C. WALLACE, INC." JOB # 62023.010 CITY OF LAS VEGAS # 107-V3574 (A/D2)
329+92, 38.00' LT (7/SD, 5/D5) L=10.0' D= 6.56' 59.39 TC
FOR EXISTING 3550 WATER, SEE: "VILLAGE 23B 3550 ZONE 24" WATERLINE – PHASE 2" By G. C. WALLACE, INC. REF. # 62A-W04-216 CLV DRAWING # 565-405-PH2
Δ=3°48'53" R=6007.00' L=399.93' T=200.04'
N 82°56'46" W 22.39'
325+36.51 43.80' LT (7/SD) L=10' D=7.89' 35.88 TC
325+49.38, 48.49' LT (27/W)
325+60, 48.51' LT (4/W)
TEMPORARY 36"SD
64.20' N64°40'53"E
10.00'
7.00'
Δ=0°20'27" R=6007.00' L=35.73' T=17.87'
SDMH #18 (4/SD)
78"SD
EX. 10" DIP (3350)
EX. 10 LF ~ 12"W (3550)
Δ=0°56'56" R=6007.00' L=99.48' T=49.74'
N 64°40'53" E 102.28'
325+49.38 17.00' RT (27/W, 26/W)
REMOVE EXISTING BERM & RIPRAP
EX.16" DIP WATER (3550) XC 9849
EX.16" DIP WATER (3550) XC 9849
SDMH # 19 (4/SD) 329+70.31 PCC, 16' LT
329+82 16.00' LT (6/SD)
24"SD
52.95' S 59°29'33" W
329+87.93 15.00 RT (9/SD, 11/SD)
325+36.45 21.59' LT (6/SD, 4/D5)
329+92, 38.00' RT (7/SD, 5/D5) L=10.0' D= 5.78' 59.39 TC
VILLAGE 23A
PARCEL M
APN 137-34-312-001
LIMIT OF ROUGH GRADING
VARIES
32.00' LS
29.67'
24.00' LS
8"
RIP RAP
EX.

SCALE: 1" = 40'

NORTH

20 0 20 40
SCALE FEET

VILLAGE 30 | VILLAGE 23B
ALTA DRIVE
SHEETS P16 & U16
SHEETS P17 & U17
VILLAGE 23A
PARCEL N
PARCEL ES-1
SUNCREEK ROAD
SHEETS P15 & U15
SHEETS P14 & U14
SHEETS P8 & U13
SKY VISTA DR
SHEETS P12 & U12
SHEETS P11 & U11
SHEETS P10 & U10
PARCEL C
PARCEL D/E
VILLAGE 24
GROSSBEAK DR
NORTH N.T.S.
SHEET INDEX MAP

SKY VISTA DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

270.00' VC
PVI STA = 324+50
PVI ELEV = 3331.60
A.D. = 2.20
K = 122.73
EVC 325+85
DG 3338.62
FOR EX. ROUGH GRADING, SEE: "VILLAGE 23A – ROUGH GRADING By G. C. WALLACE, INC." JOB # 62023.010 CITY OF LAS VEGAS # 107-V3574
DESIGN GRADE @ ℄
EX. ROUGH GRADE @ ℄
18.5"
5.20%
100-YEAR HGL
EX. 16" DIP WATER (3550 ZONE) XC 9849
78"SD @ 4.80%
SDMH # 19 58.3± TMH
SDMH # 18 37.5± TMH
100-YEAR HGL
EX. 16" DIP WATER (3550 ZONE) XC 9849
399.93 LF ~ 78" CLASS III RCP @ 5.41%
Q_{100} = 467 cfs
Q_{100} = 441 cfs
FOR EXISTING 3550 WATER, SEE: "VILLAGE 23B 3550 ZONE 24" WATERLINE – PHASE 2" By G. C. WALLACE, INC. REF. # 62A-W04-216 CLV DRAWING # 565-405-PH2
325+49.38, 27' RT (26.39) INV 12"W (26.22) INV 16"W
21.73' INV
135.21 LF ~ 78" CLASS III RCP @ 2.0%
Q_{100} = 467 cfs
325+36.45, 21.59' LT 24.41 INV 36"SD 22.66 INV 78"SD
325+72, 20.71' LT 23.38 INV 78"SD
329+70.31, 16' LT 45.02 INV 78"SD HORIZ. PCC & VERT. ∠ PT.
329+82, 16' LT 47.85 INV 24"SD 45.60 INV 78"SD
EX. ROUGH GRADE @ ℄ (TYP)
DESIGN GRADE @ ℄ (TYP)

| | | |

VILLAGE 24
PARCEL C
APN 137-22-000-015

VILLAGE 23A
PARCEL M
APN 137-34-312-001

MATCHLINE STATION 330+00 SEE SHEET U11

MATCHLINE STATION 335+10 SEE SHEET U13

RIPRAP
D_{50} = 8"
THICKNESS=16"

TEMPORARY TRAPEZOIDAL DITCH

200.0' @ 1.2%

199.66' @ 1.2%

TEMPORARY DIVERSION BERM

331+87.24, 128.79' LT
70.0 INV DITCH

113.57' @ 1.58%

331+87.50, 117.80' LT
72.0 GB/TOP OF BERM

332+97.59, 130.45' LT
BEGIN 20' TRANSITION
71.8 INV DITCH
BEGIN RIPRAP

21.19 LF @ 10.19%
N 25°12'23" W

333+17.87, 134.02' LT
END 20' TRANSITION
73.96 INV DITCH

332+98, 121.96' LT
73.80 GB/TOP OF BERM

218.49 LF @ 10.27%

239.53 LF @ 10.27%

RIPRAP
D_{50} = 10"
THICKNESS=20"

FOR EX. ROUGH GRADING, SEE:
"VILLAGE 23A – ROUGH GRADING
By G. C. WALLACE, INC."
JOB # 62023.010
CITY OF LAS VEGAS # 107-V3574

LIMIT OF ROUGH GRADING

Δ=4°55'19"
R=4436.00'
L=381.06'
T=190.65'

Δ=4°18'11"
R=4436.00'
L=333.15'
T=166.65'

32.0' LIS

78"SD

SDMH #20

REMOVE EXISTING BERM & RIPRAP

EX.16" DIP WATER (3550) XC 9849

EX. 8"W

EX. F.H.

EX. RIP-RAP

8±

BC

24.0' LS

76.00'ROW

16'

FOR EXISTING 3550 WATER, SEE:
"VILLAGE 23B 3550 ZONE
24" WATERLINE – PHASE 2"
By G. C. WALLACE, INC.
REF. # 62A-W04-216
CLV DRAWING # 565-405-PH2

330+10

335+00

331+00

332+00

333+00

334+00

3370

3375

3380

3385

3390

3365

3360

3.1

5:1

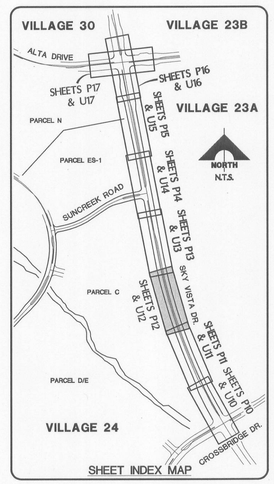
85

90

95

NORTH

SCALE 20 0 20 40 FEET



SHEET INDEX MAP

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BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM NO. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

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CLARK COUNTY TRAFFIC OPERATIONS
1-702-455-7544

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE
(PROJECT # 114100)

280.00' VC
PVI STA = 333+00
PVI ELEV = 3375.80
A.D. = −2.20
K = 127.27

BVC 331+60
DG 3368.52

EVC 334+40
DG 3380.00

3.00%

SDMH # 20
76.7± TMH

DESIGN GRADE @ ℄

EX. ROUGH GRADE @ ℄

18.5"

100-YEAR HGL

EX. 16" DIP WATER (3550 ZONE) XC 9849

5.20%

331+50, 30' RT
(57.73) INV 8"W
(57.40) INV 16"W

330+60, 30' RT
(53.14) INV 6"W (FH)
(52.72) INV 16"W

381.06 LF ~ 78" CLASS III RCP @ 4.80%
Q_{100} = 441 cfs

333.15 LF ~ 78" CLASS III RCP @ 3.10%
Q_{100} = 441 cfs

333+50, 16' LT
63.31 INV 78"SD

68.29 INV

45.55 INV

(3361.26) 3362.80
(3363.86) 3365.40
(3366.46) 3368.60
(3369.00) 3370.54
(3371.34) 3372.88
(3373.49) 3375.03
(3375.44) 3376.98
(3377.20) 3378.74
(3378.76) 3380.30
(3380.26) 3381.80
3382.10

3380
3375
3370
3365
3360
3355
3350

330+00 331+00 332+00 333+00 334+00 335+00

FOR EX. ROUGH GRADING, SEE:
"VILLAGE 23A – ROUGH GRADING
By G. C. WALLACE, INC."
JOB # 62023.010
CITY OF LAS VEGAS # 107-V3574

FOR EXISTING 3550 WATER, SEE:
"VILLAGE 23B 3550 ZONE
24" WATERLINE – PHASE 2"
By G. C. WALLACE, INC.
REF. # 62A-W04-216
CLV DRAWING # 565-405-PH2

SKY VISTA DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

CLV DRAWING NO. XXXXX

VICKI D. MARJERRISON
No. 13079
CIVIL
PROFESSIONAL ENGINEER – STATE OF NEVADA
DATE: 5-14-14

REV	DATE	DESCRIPTION	DATE AGEN APP	DATE	GCW APP
		TDS SUBMITTAL 5-14-2014 – NOT FOR CONSTRUCTION			

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:57:13

G.C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
1555 S. RAINBOW BOULEVARD - LAS VEGAS, NV 89146
T: 702.804.2000 - F: 702.804.2299 - GCW.WALLACE.COM
LAS VEGAS · SACRAMENTO · RENO

SUMMERLIN
VILLAGE 24 – UNIT 2 IMPROVEMENTS
SKY VISTA DRIVE
UTILITY PLAN AND PROFILE 3

DRAWING U12
41 OF 82 SHTS

F:\Projects\600\62024-221\DWG\Production\Unit2 TDS Plans\24U2cU12-41.dwg emcarjenson

gw2438.dwg,080712,rh

MATCHLINE STATION 335+10 SEE SHEET U12

MATCHLINE STATION 340+20 SEE SHEET U14

TEMPORARY TRAPEZOIDAL DITCH
335+28.92, 150.94' LT
96.4 INV DITCH
END RIPRAP

335+30, 140' LT
98.4 TOP OF BERM
TEMPORARY DIVERSION BERM

FOR EX. ROUGH GRADING, SEE:
"VILLAGE 23A – ROUGH GRADING
By G. C. WALLACE, INC."
JOB # 62023.010
CITY OF LAS VEGAS # 107-V3574

336+29.44
89.18' LT
81.0 INV

337+01.50
92.50' LT
80.0 INV

TEMPORARY TRAPEZOIDAL DITCH

TEMPORARY DRAINAGE INLET

RIPRAP
D50 = 8"
THICKNESS=16"

337+60
103.50' LT
89.0 INV

337+60
92.50' LT
91.0 TB

338+77, 103.50' LT
95.0 INV DITCH

117' @ 5.1% S10°38'15"E TEMPORARY TRAPEZOIDAL DITCH

117' @ 5.1% S10°38'15"E

TEMPORARY DIVERSION BERM

338+77, 92.50' LT
97.0 TOP OF BERM

LIMIT OF ROUGH GRADING

340+00
80.00' LT

5.00'

VILLAGE 24
PARCEL C
APN 137-22-000-015

N 13°29'15" W
73.28' @ 1.4%

Δ=4°18'11"
R=4436.00'
L=333.15'
T=166.65'

335+60
43.50' LT

6"W
63.50'±

S77°46'54"W

337+04, 90.00' LT
5'x5' INLET
80.00 INV

7.50'

FUTURE 15'
DRAINAGE ESMT.

22.36'
S74°04'21"E

337+04, 38.00' LT
L= 10.0' D= 8.59'
87.53 TC

24"SD

N79°21'45"E
52.00'

FUTURE 30'
LVVWD ESMT.

15.00'

339+90

100.00'
S79°21'45"W

10"W DIP

32.00' LS

38.00'

16'

76.00'ROW

336+94
16.00' LT

SDMH # 21
336+81.94
16' LT, PT

S10°38'15"E 250.06'

SDMH #22

78"SD

336+00

337+00

338+00

339+00

336+99.96
15.00 RT

PT = 336+81.94

N89°28'57"E

REMOVE EXISTING BERM & RIPRAP

335+60±
20.00'± RT

EX. 10 LF ~ 6"W (3550)

340+00
20.00' RT

EX. 10 LF ~ 12"W (3550)

EX.16" DIP WATER (3550) XC 9849

RIP-RAP

8'±

BC

EX.

24.00' LS

337+04, 38.00' RT
L= 10.0' D= 6.42'
87.53 TC

339+90

340+00
30.00' RT

LIMIT OF ROUGH GRADING

VILLAGE 23A
PARCEL M
APN 137-34-312-001

FOR EXISTING 3550 WATER, SEE:
"VILLAGE 23B 3550 ZONE
24" WATERLINE – PHASE 2"
By G. C. WALLACE, INC.
REF. # 62A-W04-216
CLV DRAWING # 565-405-PH2

LIMIT OF ROUGH GRADING

SKY VISTA DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

FOR EX. ROUGH GRADING, SEE:
"VILLAGE 23A – ROUGH GRADING
By G. C. WALLACE, INC."
JOB # 62023.010
CITY OF LAS VEGAS # 107-V3574

240.00' VC
PVI STA = 340+00
PVI ELEV = 3396.80
A.D. = 1.90
K = 126.32

PVC 338+80
DG 3393.20

18.5"

DESIGN GRADE @ ℄
EX. ROUGH GRADE @ ℄

SDMH # 21
86.9± TMH

3.00%

SDMH # 22
94.6± TMH

340+00, 30' RT (TEE)
(86.94) INV 12"W
(86.77) INV 16"W

100-YEAR HGL

336+50, 30' RT
(75.70) INV 16" GV

335+60, 30' RT (TEE)
(73.42) INV 6"W (F.H.)
(73.00) INV 16"W

EX. 16" DIP WATER (3550) XC 9849

EX. 16" DIP WATER (3550)
XC 9849

78" SD @ 4.40%

84.01
INV

250.06 LF ~ 78" CLASS III RCP @ 2.60%
Q_{100} = 446 cfs

333.15 LF ~ 78" CLASS III RCP @ 3.10%
Q_{100} = 441 cfs

Q_{100}
441 cfs

68.29
INV

336+81.94
79.44 INV 78"SD
HORIZ. P.T.

336+94, 16' LT
76.20 INV IN 24"SD
73.95 INV 78"SD

339+32, 16' LT
80.14 INV 78"SD

FOR EXISTING 3550 WATER, SEE:
"VILLAGE 23B 3550 ZONE
24" WATERLINE – PHASE 2"
By G. C. WALLACE, INC.
REF. # 62A-W04-216
CLV DRAWING # 565-405-PH2

EX. ROUGH GRADE @ ℄ (TYP)

DESIGN GRADE @ ℄ (TYP)

| | | |

VILLAGE 24
PARCEL C
APN 137-22-000-015

VILLAGE 24
PARCEL ES-1
APN 137-22-000-015

VILLAGE 23A
PARCEL N
APN 137-34-210-001

MATCHLINE STATION 340+20 SEE SHEET U13

MATCHLINE STATION 345+00 SEE SHEET U15

SEE SHEET U9

SUNCREEK RD. (PUBLIC)

8"S SEE SHEET U9

17+99.91 SEE SHEET U9

18+07 SEE SHEET U9

LIMIT OF ROUGH GRADING

TEMPORARY DRAINAGE INLET

GRADE BREAK 343+38, 112.25' LT 14.0 EG, 12.0 INV

342+86, 101' LT 11.4 FG, 09.4 INV

TEMPORARY TRAPEZOIDAL DITCH

S22°50'56"E 53.20' @ 4.9%

S22°50'56"E 74.15' @ 12.5%

125 LF @ 1.0% S10°38'15"E

GRADE BREAK 344+10, 130' LT 24.0 EG, 21.3 INV

342+50, 91' LT 10'X10' INLET 95.90 INV

FUTURE 15' DRAINAGE ESMT.

342+50, 49.00' LT L= 12.5' D= 13.09' 08.44 TC

SDMH #16

RIPRAP D50 = 8" THICKNESS=16"

72"SD

24"SD

60"SD

24"W (3550)

INSTALL PRESSURE GASKETS ON 60" SD BETWEEN D.I. & SDMH # 24.

SDMH #23

SDMH #24

INSTALL PRESSURE GASKETS ON 42" SD BETWEEN SDMH # 24 & #25.

FOR EX. ROUGH GRADING, SEE: "VILLAGE 23A – ROUGH GRADING By G. C. WALLACE, INC." JOB # 62023.010 CITY OF LAS VEGAS # 107-V3574

N10°38'15"W 233.00'

78"SD

85.00'

60"SD N10°38'15"W

292.46'

42"SD

49.00'

87.00' ROW

76.00' ROW

SEE SHEET U9 FOR WATER LINE DATA

EX. 24"W (3550). 79.34 LF TO BE REMOVED AND REPLACED

EX. 24"W (3550) 28.6 LF TO REMAIN

18+86.83 SUNCREEK RD.

341+75.03 SKY VISTA DR.

342+50, 15' RT

REMOVE EXISTING BERM & RIPRAP

EX.16" DIP WATER (3550) XC 9849

EX.24" DIP WATER (3550) XC 9849

EX.24" DIP WATER (3550) XC 9849

EX. F.H.

341+44± 34.0' RT EX. BLOW OFF

341+49.36± 30.00' RT EX. 24"x24" (TEE)

342+50, 38.00' RT L= 12.5' D= 5.73' 8.66 TC

EX. RIP RAP

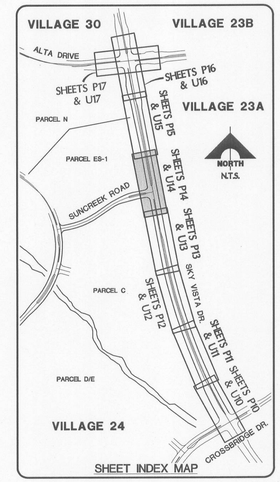
LIMIT OF ROUGH GRADING

FOR EXISTING 3550 WATER, SEE: "VILLAGE 23B 3550 ZONE 24" WATERLINE – PHASE 2" By G. C. WALLACE, INC. REF. # 62A-W04-216 CLV DRAWING # 565-405-PH2

LIMIT OF ROUGH GRADING

NORTH

SCALE 20 0 20 40 FEET



SHEET INDEX MAP

SKY VISTA DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

240.00' VC
PVI STA = 340+00
PVI ELEV = 3396.80
A.D. = 1.90
K = 126.32

EVC. 341+20 DG 3402.68

341+44, 34' RT EX. BLOW-OFF ASSEMBLY

SDMH # 23 04.6± TMH

341+75.03 SUNCREEK RD. DG 3405.38

FOR EX. ROUGH GRADING, SEE: "VILLAGE 23A – ROUGH GRADING By G. C. WALLACE, INC." JOB # 62023.010 CITY OF LAS VEGAS # 107-V3574

DESIGN GRADE @ ℄

EX. ROUGH GRADE @ ℄

SDMH # 24 08.7± TMH

18.5"

4.90%

INSTALL PRESSURE GASKETS ON 42" SD BETWEEN SDMH # 24 AND #25.

24" DIP WATER (3550 ZONE) XC 9849

100-YEAR HGL

BVC 344+30 DG 3417.87

240.00' VC
PVI STA = 345+50
PVI ELEV = 3423.75
A.D. = -1.90
K = 126.32

08.80 INV

341+49.52, 16' LT 97.50 INV 24"W (3550)

340+60, 30' RT (TEE) (89.71) INV 6"W (FH) (89.29) INV 16"W

EX. 24"X16" REDUCER

6.5' CLR.

EX. 16" DIP WATER (3550 ZONE) XC 9849

292.46 LF ~ 42" CLASS III RCP @ 5.31%
Q_{100} = 63 cfs

FOR EXISTING 3550 WATER, SEE: "VILLAGE 23B 3550 ZONE 24" WATERLINE – PHASE 2" By G. C. WALLACE, INC. REF. # 62A-W04-216 CLV DRAWING # 565-405-PH2

342+50, 16' LT 97.02 INV IN 24"SD (E) 94.02 INV IN 60"SD (W) 95.52 INV IN 42"SD (N) 94.02 INV OUT 60"SD (S)

85 LF ~ 60" CLASS III RCP @ 2.50%
Q_{100} = 101 cfs

341+65, 16' LT 91.89 INV IN 60"SD (N) 90.89 INV IN 72"SD (W) 90.39 INV OUT 78"SD (S)

89.71 INV 78"SD

341+49.36, 30' RT (93.42) INV 24" TEE

233 LF ~ 78" CLASS III RCP @ 4.40%
Q_{100} = 446 cfs

84.01 INV

EX. GROUND @ ℄ (TYP)

DESIGN GRADE @ ℄ (TYP)

| | | |

VILLAGE 24
PARCEL ES-1
APN 137-22-000-015

VILLAGE 24
PARCEL M
APN 137-22-000-015

MATCHLINE STATION 345+00 SEE SHEET U14

MATCHLINE STATION 350+00 SEE SHEET U16

GRADE BREAK
345+35, 130' LT
24.6 EG, 22.6 INV

TEMPORARY TRAPEZOIDAL DITCH

S10°38'15"E

4 / D9 347+60, 130' LT
41.5 EG, 39.5 INV

3 / D9 348+00
115' LT
38.6 INV

8 / D5 TEMPORARY DRAINAGE INLET

RIPRAP
D50 = 8"
THICKNESS=16"

8 / D5 349+47, 98.96' LT
20.99 INV 5'X5' INLET

349+24.03, 103.91' LT
31.0 FG, 29.0 INV

TEMPORARY "V" DITCH

349+69.55
107.94' LT
32.1 FG
29.1 INV

N05°31'42"W

TEMPORARY "V" DITCH

S28°33'01"E

LIMIT OF ROUGH GRADING

8 / D7 5 / W 346+40
82.17' LT

FOR EX. ROUGH GRADING, SEE:
"VILLAGE 23A – ROUGH GRADING
By G. C. WALLACE, INC."
JOB # 62023.010
CITY OF LAS VEGAS # 107-V3574

A / D2

FUTURE 30'
LVVWD ESMT.

345+60
43.89' LT
4 / W 7 / D7

7 / IR 348+00

8 / D5 7 / SD 349+47, 46.95' LT
L= 10.0' D= 14.64'
35.09 TC

FUTURE 15'
DRAINAGE ESMT.

36" SD

S79°21'45"W
520.01'

20.74'
N86°33'39"W

36" SD

SDMH #26
3 / SD

3 / SD SDMH #25

6"W

S79°21'45"W
63.89'

10"W DIP

S79°21'45"W
112.17'

42"SD
399.64'
N11°54'15"W

24"SD

S75°08'36"W
70.61'

9 / SD 349+44.94
15.00 RT

24"x10" TAPPING SLEEVE
AND 10" TAPPING VALVE
(CONTRACTOR TO VERIFY
SIZE, INVERT, AND LOCATION OF
EXISTING WATER LINE)

EX. 10 LF ~ 6"W (3550)

EX.24" DIP WATER (3550) XC 9849

REMOVE EXISTING BERM & RIPRAP

EX.24" DIP WATER (3550) XC 9849

13 / W
22 / W 345+60
20.00' RT
21 / W
28 / W
25 / W 346+40
30.00' RT

345+60
30.00' RT
EX. 24"x6" TEE

(EX.8" W)

346+50±
(72.00' RT)

2 / IR 348+00

7 / SD 8 / D5 349+47, 47.57' RT
L= 10.0' D= 5.27'
35.08 TC

LIMIT OF ROUGH GRADING

FOR EXISTING 3550 WATER, SEE:
"VILLAGE 23B 3550 ZONE
24" WATERLINE – PHASE 2"
By G. C. WALLACE, INC.
REF. # 62A-W04-216
CLV DRAWING # 565-405-PH2

VILLAGE 23A
PARCEL N
APN 137-34-210-001

SKY VISTA DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

240.00' VC
PVI STA = 345+50
PVI ELEV = 3423.75
A.D. = −1.90
K = 126.32

FOR EX. ROUGH GRADING, SEE:
"VILLAGE 23A – ROUGH GRADING
By G. C. WALLACE, INC."
JOB # 62023.010
CITY OF LAS VEGAS # 107-V3574

EVC 346+70
DG 3427.35

DESIGN GRADE @ ℄
EX. ROUGH GRADE @ ℄
18.5"

3.00%

SDMH # 25
22.6± TMH

SDMH # 26
35.0± TMH

EX. 24" DIP WATER
(3550 ZONE)
XC 9849

349+00, 30' RT
VERT. DEFLECTION ∠
(23.55) INV EX. 24"W

346+40, 30' RT
16.29 INV 10"W
(15.71) INV 24"W

346+50, 30' RT (TEE)
(16.70) INV 8"W
(16.03) INV 24"W

345+60, 30' RT (TEE)
(13.62) INV 6"W (FH)
(12.87) INV 24"W

100-YEAR HGL

EX. 24" DIP WATER (3550 ZONE) XC 9849

100-YEAR HGL

399.64 LF ~ 42" CLASS III RCP @ 2.0%
Q_{100} = 63 cfs

100-YEAR HGL

42" SD @ 5.31%

345+42.46, 16" LT
11.05' INV 42"SD

08.80
INV

349+42, 24.83' LT
20.54 INV IN 24"SD (E)
19.54 INV IN 36"SD (W)
19.04 INV OUT 42"SD (S)

FOR EXISTING 3550 WATER, SEE:
"VILLAGE 23B 3550 ZONE
24" WATERLINE – PHASE 2"
By G. C. WALLACE, INC.
REF. # 62A-W04-216
CLV DRAWING # 565-405-PH2

EX. ROUGH GRADE @ ℄ (TYP)
DESIGN GRADE @ ℄ (TYP)

(3419.57)
3421.11

(3421.64)
3423.18

(3423.52)
3425.06

(3425.19)
3426.73

(3426.71)
3428.25

(3428.21)
3429.75

(3429.71)
3431.25

(3431.21)
3432.75

(3432.71)
3434.25

(3434.21)
3435.75

(3435.71)
3437.25

345+00 346+00 347+00 348+00 349+00 350+00

3435 3430 3425 3420 3415 3410 3405

NORTH

SCALE
20 0 20 40
FEET

VILLAGE 30
VILLAGE 23B
ALTA DRIVE
SHEETS P16 & U16
SHEETS P17 & U17
SHEETS P15 & U15
VILLAGE 23A
PARCEL N
NORTH N.T.S.
SHEETS P14 & U14
PARCEL ES-1
SUNCREEK ROAD
SHEETS P13 & U13
SKY VISTA DR.
PARCEL C
SHEETS P12 & U12
SHEETS P11 & U11
SHEETS P10 & U10
PARCEL D/E
CROSSBRIDGE DR.
VILLAGE 24

SHEET INDEX MAP

NOTE

THIS SET OF DRAWINGS IS BASED UPON NAVD 88 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM NO. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

Avoid overhead power line contact. It's costly.
CALL BEFORE YOU OVERHEAD
1-702-227-2929

Avoid hitting underground traffic signal system and streetlight system conduits. It's costly.
Call before you UnderGround.
1-702-455-7511
CLARK COUNTY TRAFFIC OPERATIONS AND
1-702-229-6611
LAS VEGAS AREA COMPUTERIZED TRAFFIC SYSTEM

Avoid cutting underground utility lines. It's costly.
Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE (USA) AND
CLARK COUNTY TRAFFIC OPERATIONS
1-702-455-7544

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE
(PROJECT # 114100)

CLV DRAWING NO. XXXXX

ENGINEER – STATE OF NEVADA
VICKI D. MARTINSEN
No. 13078
PROFESSIONAL ENGINEER
DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	AGEN APP	DATE	GOV APP

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:58:47

G.C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
1555 S. RAINBOW BOULEVARD · LAS VEGAS, NV 89146
T: 702.804.2000 · F: 702.804.2299 · GCWALLACE.COM
LAS VEGAS · SACRAMENTO · RENO

SUMMERLIN

VILLAGE 24 – UNIT 2 IMPROVEMENTS

SKY VISTA DRIVE
UTILITY PLAN AND PROFILE 6

DRAWING U15
44 OF 82 SHTS

emorgenson

F:\Projects\600\62024-22\1\DWG\Production\Unit2 TDS Plans\24U2cd15-44.dwg

ose2436.dwg,060712,fm

MATCHLINE STATION 350+00 SEE SHEET U15

350+15, 122.63' LT
30.1 INV
TEMPORARY "V" DITCH
350+46, 121.24' LT
33.0 FG, 30.8 INV (3 / D9)
S08°03'45"E
VILLAGE 24
PARCEL M
APN 137-22-000-015
LIMIT OF ROUGH GRADING
32.00' LS
FOR EX. ROUGH GRADING, SEE: "VILLAGE 23A – ROUGH GRADING By G. C. WALLACE, INC." JOB # 62023.010 CITY OF LAS VEGAS # 107-V3574
351+95.60, 139.35' LT SKY VISTA DRIVE= 240+90, 117.54' LT ALTA DRIVE (7 / D6) (2 / S)
FUTURE 15' SEWER ESMT. SEE SHEET U17
N 32°34'23" E 131.35'
8"S
SMH #1 352+91.34, 49.42' LT= 240+08.75, 14.33' LT ALTA DRIVE (1 / S)
A / D2
FOR EX. STORM DRAIN IMPS, SEE: "VILLAGE 23A/23B ALTA DRIVE RCB REGIONAL DRAINAGE IMPROVEMENTS" by G. C. WALLACE, INC. JOB # 62052.233, CLV # 327V269
240+44 ALTA DR. (1 / IR)
EX. 36"W (3665) CO 1117
EX. 42"SD
12"S
REMOVE EXISTING BERM & RIPRAP
N 84°21'45" E 110.75'
N09°21'52"W 45.43'
12"S
N 09°21'52" W 50.68'
SMH #2 353+36.75, 48.41' LT= 240+11.70, 31.00' RT ALTA DRIVE (1 / S)
239+38.29, 47.17' RT ALTA DRIVE = 353+46.46, 26.13' RT SKY VISTA DR. (10 / SD)
239+60.40 ALTA DRIVE
239+01.40 SKY VISTA DR.
N06°31'14" E 40.15'
24"SD
353+74.75 END NORTH BOUND IMPS
239+29.61, 86.36' RT ALTA DRIVE = 353+84.75, 38.20' RT SKY VISTA DR. 49.9± FG
EX. TEST STATION (21 / W)
FOR EX. STORM DRAIN IMPS, SEE: "VILLAGE 23A/23B ALTA DRIVE RCB REGIONAL DRAINAGE IMPROVEMENTS" by G. C. WALLACE, INC. JOB # 62052.233, CLV # 327V269
EX. 10'X8' RCB
EX. 12" WATER (3550) XC 9849
EX. 24" DIP (3550) XC 9849
EX. IRRIG
EX. 4" G
EX. 12"S
TEMPORARY DRAINAGE INLET
SKY VISTA DRIVE 353+62.54, 123.43' LT 53.4 TB (5 / D9)
TEMPORARY DIVERSION BERM
RIPRAP D50 = 6" THICKNESS=12"
N 18°41'13" E
SKY VISTA DRIVE 354+29.62, 88.76' LT 59.0 TB
TEMPORARY DIVERSION BERM
VILLAGE 30
240+65.36 31.00' RT ALTA DRIVE (2 / S)
240+44 ALTA DR. (1 / IR)
353+77.42 END SOUTH BOUND IMPS
[FUTURE 24" SD & D.I.]
354+66, 88.41' LT 59.8 TB (5 / D9)
354+50, 58.67' LT 55.1 TB/GB [50.9] TC
353+87.42 47.28 LT (2 / S)
RIPRAP D50 = 6" THICKNESS=12"
239+38.29, 47.17' RT ALTA DRIVE = 353+46.46, 26.13' RT SKY VISTA DR. (10 / SD)
EX. 10'X8'RCB
354+00.79, 32.78' RT 53.0 TB/GB
EX.36"W (3665) CO 1117
END RIPRAP REMOVAL Δ=56°03'34" R=30.00' L=29.35' T=15.97'
354+96, 50.50' RT 53.0 TB/GB MATCH EX. BERM
EXISTING RIPRAP TO REMAIN
TEMP. 24"SD
FUTURE D.I. [48.35] TC
43.12
19.01'
N10°38'15"W
354+25.88, 51.16' RT 49.9± FG, 44.59 INV 24" TEMPORARY DRAINAGE INLET (9 / D5)
10' EX. BERM
RIPRAP D50 = 6" THICKNESS=12"
RIPRAP D50 = 8" THICKNESS=16"
Δ=174°20'34" R=30.00' L=91.29' T=607.19'
FOR EX. WATER LINE, SEE: CONTRACT NO. C1117 3665 ZONE SOUTH PIPELINE PHASE 1 by GCW, CLV # 565-406
NORTH
20 0 20 40
SCALE FEET
EX. 10'X8'RCB
EX.36"W (3665) CO 1117
END RIPRAP REMOVAL Δ=56°03'34" R=30.00' L=29.35' T=15.97'
354+96, 50.50' RT 53.0 TB/GB MATCH EX. BERM
EXISTING RIPRAP TO REMAIN
TEMP. 24"SD
FUTURE D.I. [48.35] TC
43.12
19.01'
N10°38'15"W
354+25.88, 51.16' RT 49.9± FG, 44.59 INV 24" TEMPORARY DRAINAGE INLET (9 / D5)
10' EX. BERM
RIPRAP D50 = 6" THICKNESS=12"
RIPRAP D50 = 8" THICKNESS=16"
Δ=174°20'34" R=30.00' L=91.29' T=607.19'
FOR EX. WATER LINE, SEE: CONTRACT NO. C1117 3665 ZONE SOUTH PIPELINE PHASE 1 by GCW, CLV # 565-406
VILLAGE 23B
PARCEL O/P/Q/R
APN 137-22-000-015
FOR EX. ROUGH GRADING, SEE: "VILLAGE 23A – ROUGH GRADING By G. C. WALLACE, INC." JOB # 62023.010 CITY OF LAS VEGAS # 107-V3574
350+60± (30.00' RT) (21 / W)
350+98± (30.00' RT)
351+02± (30.00' RT)
REMOVE EXISTING BERM & RIPRAP
XC 9849 EX.24" DIP WATER (3550)
EX. RIPRAP (6)
EX. BO
EX. 4" AIR VALVE ASSY. (21 / W)
EX. F.H. (21 / W)
352+45.6± (39.4' RT) (21 / W)
LIMIT OF ROUGH GRADING
FOR EXISTING 3550 WATER, SEE: "VILLAGE 23B 3550 ZONE 24" WATERLINE – PHASE 2" By G. C. WALLACE, INC. REF. # 62A-W04-216 CLV DRAWING # 565-405-PH2
VILLAGE 23A
PARCEL N
APN 137-34-210-001
EX. 24" DIP (3550) XC 9849
EX. 12" WATER (3550) XC 9849
EX. 10'X8' RCB
EX. 12"S
EX. 4" G
EX. IRRIG
EX. 4" AIR VALVE ASSY. (21 / W)
EX. F.H. (21 / W)
EX. RIPRAP (6)
EX. BO
EX. 24" DIP WATER (3550) XC 9849
REMOVE EXISTING BERM & RIPRAP
EX.36"W (3665) CO 1117
ALTA DR. SEE SHT 17
12"S
EX. 42"SD
EX. 12"S
EX. 42"SD
EX. 36"W (3665)
12"S
N 84°21'45" E 110.75'
REMOVE EXISTING BERM & RIPRAP
239+60.40 ALTA DRIVE
353+01.40 SKY VISTA DR.
N06°31'14" E 40.15'
24"SD
353+74.75 END NORTH BOUND IMPS
239+29.61, 86.36' RT ALTA DRIVE = 353+84.75, 38.20' RT SKY VISTA DR. 49.9± FG
EX. TEST STATION (21 / W)
FOR EX. STORM DRAIN IMPS, SEE: "VILLAGE 23A/23B ALTA DRIVE RCB REGIONAL DRAINAGE IMPROVEMENTS" by G. C. WALLACE, INC. JOB # 62052.233, CLV # 327V269
EX. 10'X8' RCB
EX. 12" WATER (3550) XC 9849
EX. 24" DIP (3550) XC 9849
EX. IRRIG
EX. 4" G
EX. 12"S
TEMPORARY DRAINAGE INLET
SKY VISTA DRIVE 353+62.54, 123.43' LT 53.4 TB (5 / D9)
TEMPORARY DIVERSION BERM
RIPRAP D50 = 6" THICKNESS=12"
N 18°41'13" E
SKY VISTA DRIVE 354+29.62, 88.76' LT 59.0 TB
TEMPORARY DIVERSION BERM
VILLAGE 30
240+65.36 31.00' RT ALTA DRIVE (2 / S)
240+44 ALTA DR. (1 / IR)
353+77.42 END SOUTH BOUND IMPS
[FUTURE 24" SD & D.I.]
354+66, 88.41' LT 59.8 TB (5 / D9)
354+50, 58.67' LT 55.1 TB/GB [50.9] TC
353+87.42 47.28 LT (2 / S)
RIPRAP D50 = 6" THICKNESS=12"
239+38.29, 47.17' RT ALTA DRIVE = 353+46.46, 26.13' RT SKY VISTA DR. (10 / SD)
EX. 10'X8'RCB
354+00.79, 32.78' RT 53.0 TB/GB
EX.36"W (3665) CO 1117
END RIPRAP REMOVAL Δ=56°03'34" R=30.00' L=29.35' T=15.97'
354+96, 50.50' RT 53.0 TB/GB MATCH EX. BERM
EXISTING RIPRAP TO REMAIN
TEMP. 24"SD
FUTURE D.I. [48.35] TC
43.12
19.01'
N10°38'15"W
354+25.88, 51.16' RT 49.9± FG, 44.59 INV 24" TEMPORARY DRAINAGE INLET (9 / D5)
10' EX. BERM
RIPRAP D50 = 6" THICKNESS=12"
RIPRAP D50 = 8" THICKNESS=16"
Δ=174°20'34" R=30.00' L=91.29' T=607.19'
FOR EX. WATER LINE, SEE: CONTRACT NO. C1117 3665 ZONE SOUTH PIPELINE PHASE 1 by GCW, CLV # 565-406
VILLAGE 23B
PARCEL O/P/Q/R
APN 137-22-000-015
FOR EX. ROUGH GRADING, SEE: "VILLAGE 23A – ROUGH GRADING By G. C. WALLACE, INC." JOB # 62023.010 CITY OF LAS VEGAS # 107-V3574
350+60± (30.00' RT) (21 / W)
350+98± (30.00' RT)
351+02± (30.00' RT)
REMOVE EXISTING BERM & RIPRAP
XC 9849 EX.24" DIP WATER (3550)
EX. RIPRAP (6)
EX. BO
EX. 4" AIR VALVE ASSY. (21 / W)
EX. F.H. (21 / W)
352+45.6± (39.4' RT) (21 / W)
LIMIT OF ROUGH GRADING
FOR EXISTING 3550 WATER, SEE: "VILLAGE 23B 3550 ZONE 24" WATERLINE – PHASE 2" By G. C. WALLACE, INC. REF. # 62A-W04-216 CLV DRAWING # 565-405-PH2
VILLAGE 23A
PARCEL N
APN 137-34-210-001

SKY VISTA DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

353+01.40 ALTA DR. ℄, 3446.29 DG
SMH # 1 47.3± TMH
352+84.01, 1.28' LT (35.91) INV EX.36"W VERT. ∡ PT
352+74.33, 11.85' LT (36.28) INV EX.36"W HORIZ. ∡ PT
353+02.60, 19' RT (35.96) INV EX.36"W HORIZ. ∡ PT
EX. SDMH # 17 (47.4±) TMH
SMH # 2 48.7±TMH
48.57 DG
353+74.75 END NORTH BOUND
353+77.42 END SOUTH BOUND ROAD PAVEMENT
[3.00%]
FOR EX. ROUGH GRADING, SEE: "VILLAGE 23A – ROUGH GRADING By G. C. WALLACE, INC." JOB # 62023.010 CITY OF LAS VEGAS # 107-V3574
350+98, 66.5' RT EX. 4" AIR VALVE ASSEMBLY
351+02, 66.5' RT EX. 4" AIR VALVE ASSEMBLY
DESIGN GRADE @ ℄
EX. ROUGH GRADE @ ℄
18.5"
3.00%
S=0.0263
FOR EX. WATER LINE, SEE: CONTRACT NO. C1117 3665 ZONE SOUTH PIPELINE PHASE 1 by GCW, CLV # 565-406
EX. 36" 150 PSI MLTMCP – 3665 ZONE (CONTRACT C1117) S=0.0020
EX. 36" MLTMCP S=0.0426
24" DIP WATER (3550 ZONE) XC 9849
EX.42"SD @ -3.7%
50.68 LF ~ 12" PVC PUBLIC SEWER @ 4.80%
EXISTING 10'X8' RCB @ 3.73% Q_{100} = 2265 cfs
FOR EXISTING 3550 WATER, SEE: "VILLAGE 23B 3550 ZONE 24" WATERLINE – PHASE 2" By G. C. WALLACE, INC. REF. # 62A-W04-216 CLV DRAWING # 565-405-PH2
FOR EX. RCB & SD & SEWER, SEE: VILLAGE 23A/23B ALTA DRIVE RCB REGIONAL DRAINAGE IMPROVEMENTS by GCW, REF # 62052.233, CLV # 327V269
45.43 LF ~ 12" PVC PUBLIC SEWER @ 2.2%
EX. ROUGH GRADE @ ℄ (TYP)
DESIGN GRADE @ ℄ (TYP)
353+08.16, 83.41' RT = 238+77.89 14' RT ALTA DR. (22.53) INV EX. 10'X8' RCB AT PC OF CURVE
350+50, 30' RT VERT. DEFLECTION ∡ (30.55) INV EX.24"W
350+60, 30' RT (31.54) INV 6"W (FH) (30.79) INV 24"W
351+00, 30' RT (31.76) INV EX 24" GV
351+05, 30' RT VERT. DEFLECTION ∡ (31.88) INV
352+44.45, 30' RT (31.80) INV EX.24"W 45° HORIZ. BEND
352+65.56, 65.46' RT (31.52) INV EX.24"W 22.5° HORIZ. BEND
352+91.34, 49.42' LT 28.68 INV IN 12"S (NW) 28.35 INV OUT 12"S (E)
353+17.44 22.75' LT (31.20) INV
353+33.64 22.09' RT (25.05) INV 10'X8' RCB
353+36.75, 48.41' LT 28.75 INV IN 12"S (N,W) 28.55 INV OUT 12"S (S)
353+87.42, 47.28' LT 32.18 INV 12"S
353+90.73 13.63' LT 27.60 INV 10'X8' RCB 33.65 INV IN 24" AT INSIDE W. WALL
354+17.73 17.00' LT VERT. ∡ PT (29.65) INV 10'X8' RCB AT PT OF CURVE
(3435.71) 3437.25
(3437.21) 3438.75
(3438.71) 3440.25
(3440.21) 3441.75
(3441.71) 3443.25
(3443.21) 3444.75
(3444.71) 3446.25
(3446.21) 3447.75
(3447.71) 3449.25
(3449.21) 3450.75
(3450.71) 3452.25
350+00 351+00 352+00 353+00 354+00 355+00
3450 3445 3440 3435 3430 3425 3420

VILLAGE 30 VILLAGE 23B
ALTA DRIVE
SHEETS P16 & U16
SHEETS P17 & U17
VILLAGE 23A
SHEETS P15 & U15
SHEETS P14 & U14
SHEETS P13 & U13
SHEETS P12 & U12
SHEETS P11 & U11
SHEETS P10 & U10
PARCEL N
PARCEL ES-1
PARCEL C
PARCEL D/E
SUNCREEK ROAD
SKY VISTA DR.
CROSSRIDGE DR.
NORTH N.T.S.
VILLAGE 24
SHEET INDEX MAP

NOTE

THIS SET OF DRAWINGS IS BASED UPON NAVD 88 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

BENCHMARK

BM #	DESC.	NAVD 88 DATUM (FEET)	NAVD 88 DATUM (METERS)
CLV BM NO. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71	989.599

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

Avoid overhead power line contact. It's costly.
CALL BEFORE YOU OVERHEAD
1-702-227-2929

Avoid hitting underground traffic signal system and streetlight system conduits. It's costly.
Call before you UnderGround.
1-702-455-7511
CLARK COUNTY TRAFFIC OPERATIONS AND
1-702-229-6611
LAS VEGAS AREA COMPUTERIZED TRAFFIC SYSTEM

Avoid cutting underground utility lines. It's costly.
Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE (USA) AND
CLARK COUNTY TRAFFIC OPERATIONS
1-702-455-7544

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE
(PROJECT # 114100)

CLV DRAWING NO. XXXXX

PROFESSIONAL ENGINEER – STATE OF NEVADA – VICKI G. MARJERRISON – No. 13079 – CIVIL – NEVADA – DATE: 5-14-14

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

TDS SUBMITTAL 5-14-2014 – NOT FOR CONSTRUCTION

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:59:19

G.C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
1555 S. RAINBOW BOULEVARD · LAS VEGAS, NV 89146
T: 702.804.2000 · F: 702.804.2299 · GCWALLACE.COM
LAS VEGAS · SACRAMENTO · RENO

SUMMERLIN
VILLAGE 24 – UNIT 2 IMPROVEMENTS
SKY VISTA DRIVE
UTILITY PLAN AND PROFILE 7

DRAWING U16
45 OF 82 SHTS

emarjerrison

F:\Projects\600\62024-221\DWG\Production\Unit2 TDS Plans\24U2cU16-45.dwg

cse2435.dwg 080712.tn

VILLAGE 30
LIMIT OF ROUGH GRADING

240+55.36 END ROAD IMPS
BEGIN ROUGH GRADE

TEMPORARY DIVERSION BERM, SEE SHEET U16

240+65.36 31.00' RT

240+44

241+00 14.00' RT

RIPRAP D50 = 8" THICKNESS=16"

42"SD

EX.42"SD

N 84°21'45" E 30.00'

POC

242+00

241+00

SEE SHEET G1 FOR ROUGH GRADING

EX.36"W (3665)

241+13.20, 21.57' LT
52.5 TOP OF BERM

BO

TEMPORARY DIVERSION BERM

3.6%

68.8'

FOR EX. WATER LINE, SEE: CONTRACT NO. C1117 3665 ZONE SOUTH PIPELINE PHASE 1 by GCW, CLV # 565-406

241+30, 89.33' LT
55.0 TOP OF BERM

VILLAGE 24
PARCEL M
APN 137-22-000-015

LIMIT OF ROUGH GRADING

351+95.60, 139.35' LT
SKY VISTA DRIVE=
240+90, 117.54' LT
ALTA DRIVE

96.67' ROW

EX.10'x8' RCB

SMH #2
353+36.75, 48.41' LT=
240+11.70, 31.00' RT
ALTA DRIVE

12"S
N 84°21'45" E 53.65'

N 09°21'52" W 50.88'

N 09°21'52" W 45.43'

SMH #1
240+08.75, 14.33'LT =
352+91.34, 49.42' LT
SKY VISTA DR.

REMOVE EXISTING BERM & RIPRAP

353+01.40
SKY VISTA DR.

239+60.40
ALTA DRIVE

SKY VISTA DR.
SEE SHEET 16

EX.36"W (3665)

EX.RIP RAP

EX.42"SD

N 08°51'14" E 140.15'

24"SD

FOR SD SEE SHEET U16

FOR EX. ROUGH GRADING, SEE: "VILLAGE 23B WATERLINE IMPROVEMENT GRADING, 2003" by G. C. WALLACE, INC. JOB # 62023.260, CLV # 565-408

EX. TEST STATION

238+50
MATCH EX. IMPROVEMENTS

EX. PRV

FOR EX. STORM DRAIN IMPS, SEE: "VILLAGE 23A/23B ALTA DRIVE RCB REGIONAL DRAINAGE IMPROVEMENTS" by G. C. WALLACE, INC. JOB # 62052.233, CLV # 327V269

FOR EX. IMPROVEMENTS, SEE: "VILLAGE 23A/23B ALTA DRIVE IMPROVEMENTS" by G. C. WALLACE, INC. JOB # 62023.270, CLV # ———

XC 9849
EX.12" DIP WATER (3550)

EX. 10'x8' RCB

EX.12"S

110.75'
N 84°21'45" E

(3550) XC 9849
EX.24" DIP WATER

238+98
14.33' LT
ALTA DRIVE

MATCH EXISTING IMPROVEMENTS

EX.BO

FOR EXISTING 3550 WATER, SEE: "VILLAGE 23B 3550 ZONE 24" WATERLINE – PHASE 2" By G. C. WALLACE, INC. REF. # 62A-W04-216 CLV DRAWING # 565-405-PH2

FOR EX. ROUGH GRADING, SEE: "VILLAGE 23B WATERLINE IMPROVEMENT GRADING, 2003" by G. C. WALLACE, INC. JOB # 62023.260, CLV # 565-408

XC 9849
EX.24" DIP WATER (3550)

FUTURE 15' SEWER ESMT.

N 32°34'23" E 131.35'

8"S

S 06°17'14" W 7.90'

EX.RIP RAP

LIMIT OF ROUGH GRADING

VILLAGE 23B
PARCEL O
APN 137-22-000-015

VILLAGE 23A
PARCEL N
APN 137-34-210-001

LIMIT OF ROUGH GRADING

ALTA DRIVE (Public)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

NORTH

SCALE 20 0 20 40 FEET

VILLAGE 30 | VILLAGE 23B
ALTA DRIVE
SHEETS P17 & U17
SHEETS P16 & U16
VILLAGE 23A
PARCEL N
PARCEL ES-1
SHEETS P5 & U5
SHEETS P14 & U14
SHEETS P13 & U13
NORTH N.T.S.
SUNCREEK ROAD
PARCEL C
SHEETS P12 & U12
SKY VISTA DR.
SHEETS P11 & U11
SHEETS P9 & U9
PARCEL D/E
VILLAGE 24
CROSSBRIDGE DR.
SHEET INDEX MAP

240+55.36 END ROAD IMPROVEMENTS
BEGIN ROUGH GRADING SEE SHEET G1

FUTURE DESIGN GRADE @ ℄
ROUGH GRADE @ ℄ [3.00%]
DESIGN GRADE @ ℄
EX. ROUGH GRADE @ ℄
SMH # 2 48.7± TMH
SMH # 1 47.3± TMH
3.00%
EX. SDMH (47.4±) TMH
REMOVE EX. BERM AND RIPRAP
239+60.40 SKY VISTA DR. ℄ 3446.29 DG
49.14 DG
10.5"
TEMPORARY DRAINAGE INLET SEE SHEET G1
2:1
40.8 WSE INTERIM
EX. 36"W (3665) LVVWD CONTRACT 1117
100-YEAR HGL
EX 85.54 LF ~ 42" CLASS III RCP @ 3.70%
EX 41.94 LF ~ 42" RCP @ 3.70%
53.65 LF ~ 12" PVC PUBLIC SEWER @ -4.80%
110.75 LF ~ 12" PVC PUBLIC SEWER @ -1.0%
30 LF ~ 42" CLASS III RCP @ -3.7%
Q_{100} = 37 cfs ULTIMATE
Q_{100} = 82 cfs INTERIM
370 LF ~ EX. 12" PVC PUBLIC SEWER @ -1.0%
8 LF ~ EX. 12" PVC PUBLIC SEWER @ -1.0%
EX. 67.46 LF 10'X8' RCB @ -3.73%
Q_{100} = 2274 cfs
EX. GRADE @ ℄ (TYP)
FUTURE DESIGN GRADE @ ℄ (TYP)
EXISTING DESIGN GRADE @ ℄ (TYP)
DESIGN GRADE @ ℄ (TYP)

FOR EX. ROUGH GRADING, SEE: "VILLAGE 23B WATERLINE IMPROVEMENT GRADING, 2003" by G. C. WALLACE, INC. JOB # 62023.260, CLV # 565-408

FOR EX. ROUGH GRADING, SEE: "VILLAGE 23A – ROUGH GRADING By G. C. WALLACE, INC." JOB # 62023.010 CITY OF LAS VEGAS # 107-V3574

260.00' VC
PVI STA = 236+57.38
PVI ELEV = 3437.20
A.D. = -1.60
K = 162.47

237+87.38 EVC
DG 3441.10

FOR EX. IMPROVEMENTS, SEE: "VILLAGE 23A/23B ALTA DRIVE IMPROVEMENTS" by G. C. WALLACE, INC. JOB # 62023.270, CLV # ———

FOR EXISTING 3550 WATER, SEE: "VILLAGE 23B 3550 ZONE 24" WATERLINE – PHASE 2" By G. C. WALLACE, INC. REF. # 62A-W04-216 CLV DRAWING # 565-405-PH2

238+77.89, 17' RT
EX SDMH (44.3±) TMH

EX.SMH # 17 (43.8±) TMH

238+50
MATCH EXISTING IMPROVEMENTS

(42.98) DG

(3.00%)

EX.36"W (36.0±) INV (3665)

239+07.66
45° BEND
INV 31.90

EX 24" WATER (3550) XC 9849

238+06
6"W (FH)

237+92.61
EX 12" W

237+64.78
EX 12" W

100-YEAR HGL

FOR EX. RCB & SD & SEWER, SEE: VILLAGE 23A/23B ALTA DRIVE RCB REGIONAL DRAINAGE IMPROVEMENTS by GCW, REF # 62052.233, CLV # 327V269

241+87.44, 28' LT (40.91) INV 36"W
241+45.51, 28' LT (40.91) INV 36"W
241+00 14'RT 35.47 INV
240+70, 14' RT (34.36) INV
240+65.36, 31' RT 32.33 INV 12"S
240+11.70, 31' RT 29.75 INV IN 12"S (N, W) 29.55 INV OUT 12"S (S)
240+08.75, 14.33' LT 28.68 INV IN 8"S (S) 28.55 INV IN 12"S (N) 28.35 INV OUT 12"S (E)
239+84.46, 14' RT (31.20) INV
239+41.20, 34.04' RT (25.05) INV 10'x8' RCB (28.65) INV EX.42"SD @ INSIDE S. WALL
238+98, 14.33' LT (27.24) INV 12"S
238+90.00 14.33' LT (27.16) INV IN (26.96) INV OUT

FOR EX. WATER LINE, SEE: CONTRACT NO. C1117 3665 ZONE SOUTH PIPELINE PHASE 1 by GCW, CLV # 565-406

(3459.9) [3453.48]
(3458.3) [3451.98]
(3455.9) [3450.48]
(3452.1) 3448.98
(3446.0) 3447.48
(3448.1) 3445.98
(3446.8) 3444.48
(3445.9) 3442.98
(3444.0) (3441.48)
(3438.8) (3439.94)
(3437.5) (3438.24)

242+00 241+00 240+00 239+00 238+00 237+00

Avoid overhead power line contact. It's costly.
CALL BEFORE YOU OVERHEAD
1-702-227-2929

Avoid hitting underground traffic signal system and streetlight system conduits. It's costly.
Call before you UnderGround.
1-702-455-7511
CLARK COUNTY TRAFFIC OPERATIONS AND
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LAS VEGAS AREA COMPUTERIZED TRAFFIC SYSTEM

Avoid cutting underground utility lines. It's costly.
Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE (USA) AND
CLARK COUNTY TRAFFIC OPERATIONS
1-702-455-7544

NOTE
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BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM NO. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS
NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE
(PROJECT # 114100)

ENGINEER - STATE OF NEVADA
VICKI D. MARJERRISON
No. 13079
PROFESSIONAL ENGINEER
CIVIL
DATE: 5-14-14

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 13:59:50

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SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
ALTA DRIVE
UTILITY PLAN AND PROFILE

DRAWING U17
46 OF 82 SHTS

CLV DRAWING NO. XXXXX

emarjerrison
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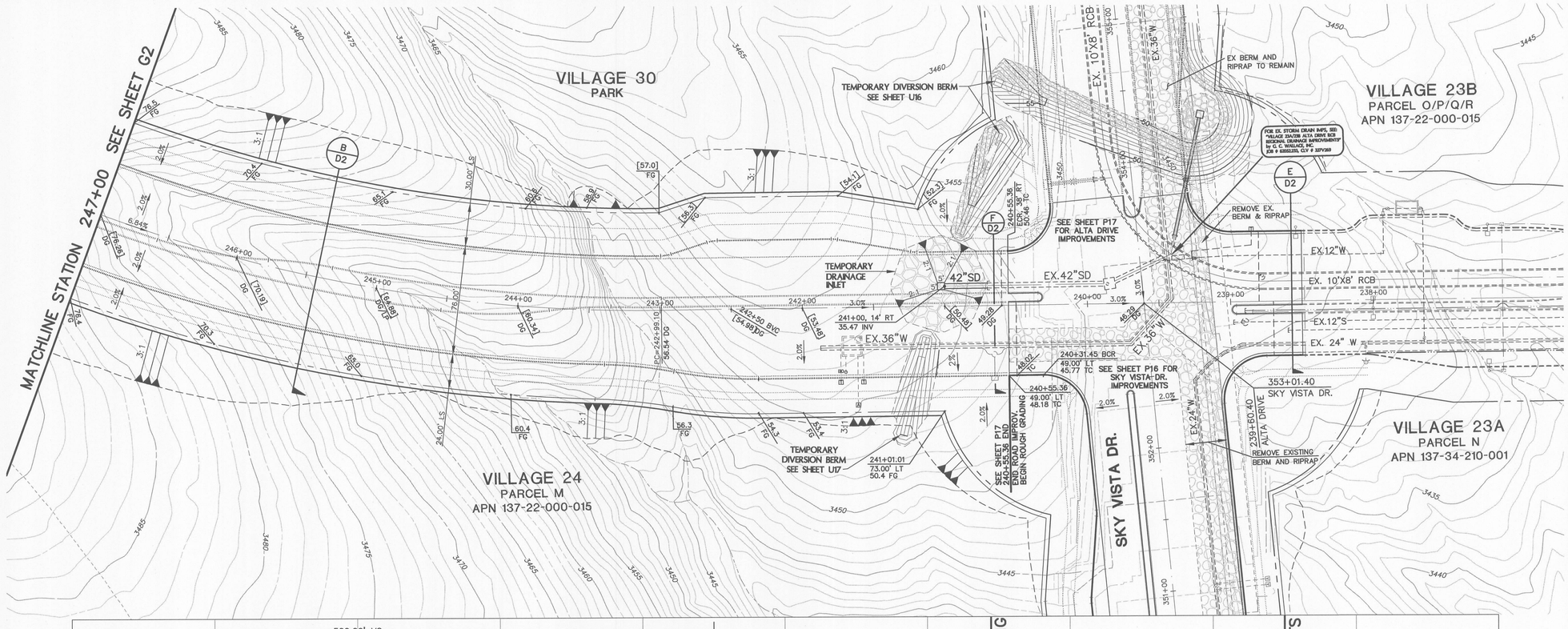

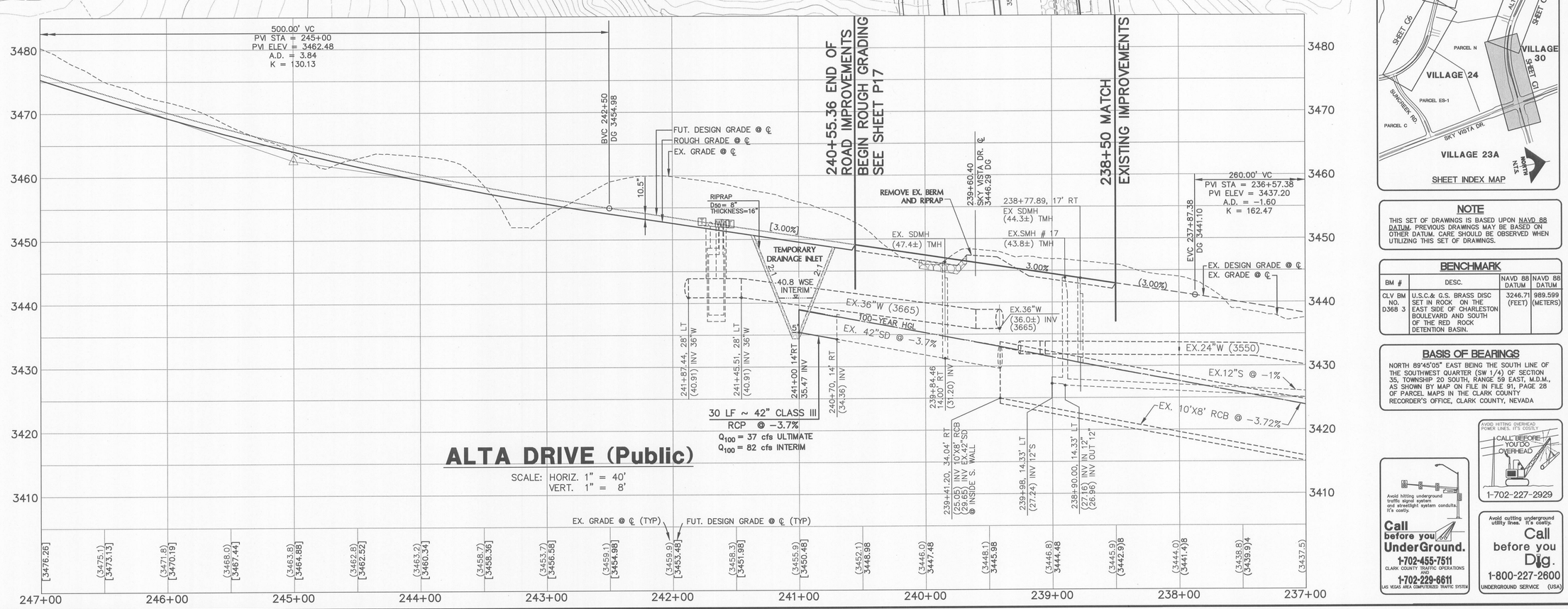

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STATE OF NEVADA — REGISTERED PROFESSIONAL ENGINEER — VICKI D. MARJERRISON — No. 13511 — CIVIL — Exp. 12/31/2015 — DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE	AGEN. APP	DATE	GCW APP

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 14:00:18

SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

ALTA DRIVE
ROUGH GRADING PLAN AND PROFILE 1

DRAWING G1
47 OF 82 SHTS

CLV DRAWING NO. XXXXX

emorjerrison

F:\Projects\600\62024-221\DWG\Production\Unit2 TDS Plans\24u2cg01-47.dwg

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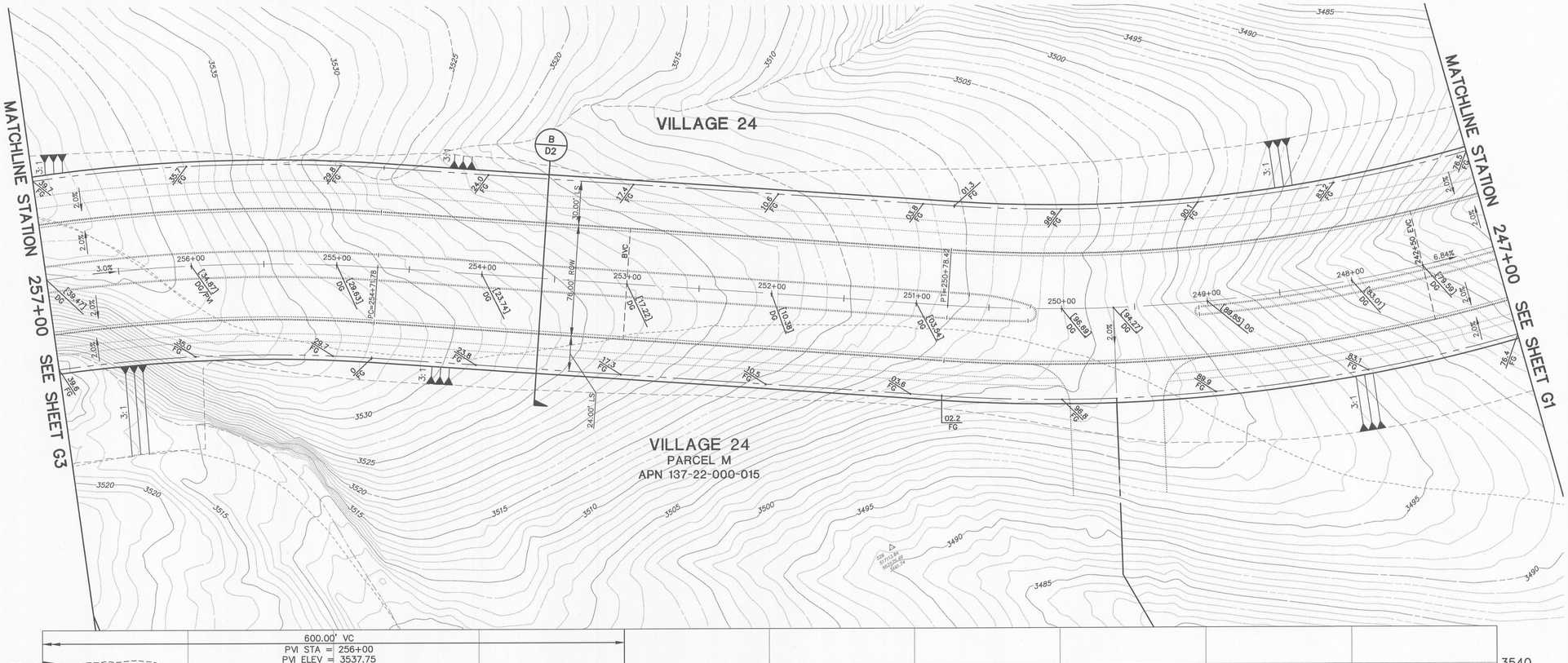

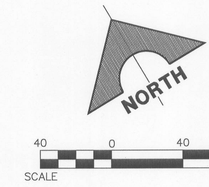

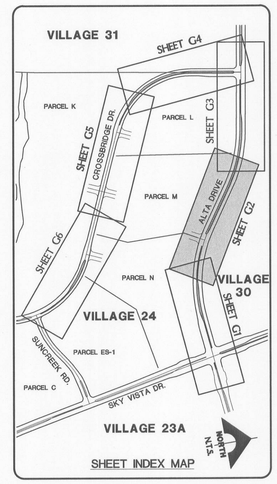

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PROJECT NO. 62A.24.212

DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 14:00:44

SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

ALTA DRIVE
ROUGH GRADING PLAN AND PROFILE 2

DRAWING
G2
48 OF 82 SHTS

CLV DRAWING NO. XXXXX

ENGINEER - STATE OF NEVADA
VICKI D. MARJERRISON
Exp. 12/31/2015
CIVIL
No. 13245
PROFESSIONAL

DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE	AGEN. APP	DATE	GCW APP

emorjerrison

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gcw2436.dwg,080712.in

VILLAGE 30
DB #5

APPROXIMATE LOCATION OF ZONE A FROM FIRM 2125 AND 2150 OF 4090

265+66.11, 111.36' RT
73.0 TOP OF BERM

265+73.28, 85.33' RT
74.0 TB/GB

265+77, 71.84' RT
PT, 75.0 TB/GB

265+90.11, 52.87' RT
PC, 78.0 TB/GB

266+47.45, 11' RT
89.0 TOP OF BERM

TEMPORARY DIVERSION BERM

27' @ 3.7%
N25°28'24"E

14' @ 7.14%
N25°28'24"E

23.49' @ 12.77%
Δ=38°27'12"
R=35.00'
L=23.49'
T=12.21'

71' @ 15.49%
N63°55'36"E

264+41.80
ALTA DRIVE

5+88.31
CROSSBRIDGE DR.
3563.00, DG

265+05.30, 38' RT
END ROUGH GRADING

265+05.30, 38' LT
BCR, END ROUGH GRADING

263+75.80, 38.00' LT
PC

APPROXIMATE LOCATION OF ZONE A FROM FIRM 2125 AND 2150 OF 4090

B
D2

VILLAGE 24
PARCEL M
APN 137-22-000-015

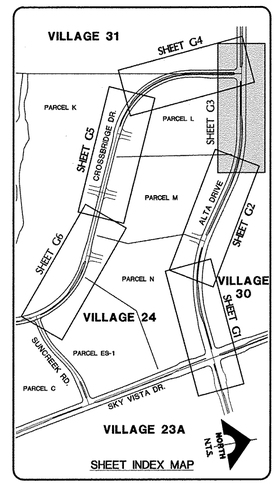
VILLAGE 31

CROSSBRIDGE DR.
SEE SHEET G4

MATCHLINE STATION 257+00 SEE SHEET G2

NORTH

SCALE 40 0 40 80 FEET



SHEET INDEX MAP

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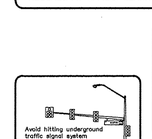



ALTA DRIVE (Public)

SCALE: HORIZ. 1" = 40'
VERT. 1" = 8'

STA 265+05.30 LIMIT OF ROUGH GRADING

264+41.80
CROSSBRIDGE DR. ℄
[3563.00] DG

FUT. DESIGN GRADE @ ℄
ROUGH GRADE @ ℄
EX. GRADE @ ℄

[3.00%]

10.5"

600.00' VC
PVI STA = 256+00
PVI ELEV = 3537.75
A.D. = -3.84
K = 156.12

EVC 259+00
DG 3546.75

EX. GRADE @ ℄ (TYP)
FUT. DESIGN GRADE @ ℄ (TYP)

267+00	266+00	265+00	264+00	263+00	262+00	261+00	260+00	259+00	258+00	257+00
[3570.75]	(3589.4) [3569.25]	(3582.9) [3567.75]	(3575.7) [3566.25]	(3567.7) [3564.75]	(3563.3) [3563.25]	(3561.1) [3561.75]	(3554.8) [3560.25]	(3550.6) [3558.75]	(3547.9) [3557.25]	(3547.4) [3555.75]	(3549.2) [3554.25]	(3546.2) [3552.75]	(3542.4) [3551.25]	(3537.1) [3549.75]	(3534.7) [3548.25]	(3534.8) [3546.75]	(3533.0) [3545.17]	(3533.4) [3543.43]	(3535.3) [3541.53]	(3538.7)

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PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 14:01:10

SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

ALTA DRIVE
ROUGH GRADING PLAN AND PROFILE 3

DRAWING G3
49 OF 82 SHTS

CLV DRAWING NO. XXXXX

REV	DATE	DESCRIPTION	DATE: AGEN APP	DATE: GOV APP

ENGINEER - STATE OF NEVADA
VICKI M. JERRISON
No. 13078
PROFESSIONAL ENGINEER
CIVIL
DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

emorjerrison

F:\Projects\6060\62024-221\DWG\Production\Unit2 TDS Prints\2402c603-48.dwg

oc2438.dwg 060712.rn

CROSSBRIDGE DRIVE (Public) - DRAINAGE CORRIDOR CROSSING

SCALE: HORIZ. 1" = 20'

VILLAGE 24
PARCEL K
APN 137-22-000-015

VILLAGE 24
PARCEL J
APN 137-22-000-015

VILLAGE 24
PARCEL C
APN 137-22-000-015

VILLAGE 24
PARCEL D/E
APN 137-22-000-015

COS-1
DRAINAGE CORRIDOR

COS-2
DRAINAGE CORRIDOR

POSSIBLE FUTURE PARCEL ENTRY

16" 3550 WATER (FUT. 3665)

12"W (3550)

12"S

8"S

10"S

24"SD

BEGIN DRAINAGE CORRIDOR CROSSING
S44°55'43"E 108.35'

END DRAINAGE CORRIDOR CROSSING
S44°55'43"E 99.21'

39+88.44
48.50' RT
41.70 TW

40+36.84
48.50' LT
41.29 TW
37.0 TF

4.3' RET. WALL

40+64.88
44.40' LT
27.00 INV
5'x4' RCB
(1 / G8)

40+76.65
44.40' LT
27.00 INV
5'x4' RCB
(2 / G8)

41+12.83
44.40' LT
27.00 INV
5'x4' RCB
(1 / G9)

40+25.51
44.61' RT
29.00 INV
5'x4' RCB
(1 / G8)

40+39.19
44.61' RT
29.00 INV
5'x4' RCB
(2 / G8)

40+81.10
44.61' RT
29.00 INV
5'x4' RCB
(1 / G9)

40+94.78
44.61' RT
29.00 INV
5'x4' RCB
(2 / G9)

41+36.67
44.61' RT
29.00 INV
5'x4' RCB
(3 / G9)

41+50.35
44.61' RT
29.00 INV
5'x4' RCB
(4 / G9)

41+24.70
44.40' LT
27.00 INV
5'x4' RCB
(2 / G9)

41+61.14
44.40' LT
27.00 INV
5'x4' RCB
(3 / G9)

41+73.08
44.40' LT
27.00 INV
5'x4' RCB
(4 / G9)

41+91, 96.77' LT
CULVERT HEADWALL
PER N.D.O.T. R-2.5:1
27.00 INV 24"SD

41+98.66
48.50' LT
39.93 TW
36.0 TF

4' RET. WALL

41+77.77
48.50' RT
40.00 TW

5'x4' RCB S44°55'43"E

6 PRECAST ARCH
40+70.77
S66°44'48"E

6 PRECAST ARCH
40+35.35
N69°50'09"W

6 PRECAST ARCH
41+18.77
S62°46'05"E

6 PRECAST ARCH
40+67.84
N65°17'35"W

6 PRECAST ARCH
41+43.51
N60°44'35"W

6 PRECAST ARCH
41+67.11
S58°48'42"E

CROSSING RETAINING WALL
Δ=15°29'48"
R=651.50'
L=176.21'
T=88.65'

CROSSING RETAINING WALL
Δ=13°14'43"
R=748.50'
L=173.03'
T=86.90'

RIPRAP
D50= 8"
THICKNESS=16"

RIPRAP
D50= 17"
THICKNESS=34"

LIMIT OF RIPRAP

LIMIT OF ROUGH GRADING

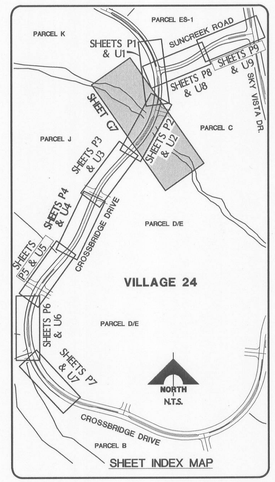
12' INTERIM ACCESS RAMP
4" TYPE II MAX SLOPE 10%
PERMANENT RAMP TO BE
CONSTRUCTED WITH PARCEL C

12' INTERIM ACCESS RAMP
4" TYPE II MAX SLOPE 10%
PERMANENT RAMP TO BE
CONSTRUCTED WITH PARCEL J

WASH

NORTH

SCALE 20 0 20 40 FEET



SHEET INDEX MAP

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LAS VEGAS - SACRAMENTO - RENO

ENGINEER - STATE OF NEVADA
VICKI D. MARJERRISON
No. 13509
CIVIL
Exp. 12/31/2015
PROFESSIONAL ENGINEER
DATE: 5-14-14

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP
		TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION				

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 14:02:54

SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

CROSSBRIDGE DRIVE
ROUGH GRADING AT DRAINAGE CORRIDOR CROSSING

DRAWING G7
53 OF 82 SHTS

CLV DRAWING NO. XXXXX

emorjerrison

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VILLAGE 30

DB #5

ALTA DR.
SEE SHEET G3

CROSSBRIDGE DR.

264+41.80
ALTA DRIVE

5+88.31
[563.00] DG

265+05.30
END ROUGH GRADING

6+56.31, 33.50' RT
EOR

76.00' ROW

38.00'

TEMPORARY DIVERSION BERM
SEE SHEET G3

APPROXIMATE LOCATION
OF ZONE A FROM FIRM
2125 AND 2150 OF 4090

APPROXIMATE LOCATION
OF ZONE A FROM FIRM
2125 AND 2150 OF 4090

VILLAGE 24
PARCEL L
APN 137-22-000-015

VILLAGE 31

9+50.19
60.50' LT
66.86 FG

9+71.00
60.50' LT
62.66 INV

10+11.00
60.50' LT
62.66 INV

RIPRAP
D50 = 6"
THICKNESS=16"

10+55.14
60.50' LT
62.66 INV

10+87.64
60.50' LT
67.72 FG

C
D2

TEMPORARY DRAINAGE CHANNEL

10+75
[67.49] DG/HP

167.00' ROW

9+50.19
76.50' RT
67.18 FG

9+71.00
76.50' RT
65.40 INV

10+11.00
76.50' RT
65.40 INV

10+46.81
76.50' RT
65.40 INV

10+73.14
76.50' RT
68.05 FG

RIPRAP
D50 = 6"
THICKNESS=16"

12+98.65
60.50' LT
64.40 FG

13+05.68
76.50' RT
64.50 FG

14+08.41
60.50' LT
52.18 INV

RIPRAP
D = 6"
THICKNESS=16"

14+53.00
60.50' LT
52.18 INV

14+98.15
60.50' LT
52.18 INV

15+14.62
60.50' LT
54.85 FG

MATCHLINE STATION 15+50 SEE SHEET G5

13+94.70
76.50' RT
55.00 INV

RIPRAP
D50 = 6"
THICKNESS=16"

14+30.75
76.50' RT
55.00 INV

14+67.09
76.50' RT
55.00 INV

14+80.29
76.50' RT
57.10 FG

FUTURE
VILLAGE 24
PARCEL K

NORTH

SCALE 40 0 40 80 FEET

VILLAGE 31

SHEET G4

PARCEL K

PARCEL L

SHEET G3

SHEET G5

CROSSBRIDGE DR.

PARCEL M

ALTA DRIVE

SHEET G2

SHEET G6

PARCEL N

VILLAGE 30

SHEET G1

VILLAGE 24

PARCEL E8-1

SUNCREEK RD.

PARCEL C

SKY VISTA DR.

VILLAGE 23A

NORTH N.T.S.

SHEET INDEX MAP

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NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

Avoid hitting underground traffic signal system and streetlight system conduits. It's costly.
Call before you UnderGround.
1-702-455-7511
CLARK COUNTY TRAFFIC OPERATIONS AND
1-702-229-6611
LAS VEGAS AREA COMPUTERIZED TRAFFIC SYSTEM

Avoid cutting underground utility lines. It's costly.
Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE (USA)

CROSSBRIDGE DRIVE (Public)

SCALE: HORIZ. 1" = 40'
VERT. 1" = 8'

EX. GRADE @ ℄ (TYP)
FUT. DESIGN GRADE @ ℄ (TYP)

5+88.31 ALTA DR. ℄
[563.00] DG

EX. GRADE @ ℄
FUT. DESIGN GRADE @ ℄
ROUGH GRADE @ ℄
[1.00%]

600.00' VC
HIGH POINT ELEV = 3567.49
HIGH POINT STA = 10+75
PVI STA = 13+00
PVI ELEV = 3570.12
A.D. = −8.00
K = 75.00

BVC 10+00
DG 3567.12

57.22 DG

9+50.19, 0' RT
[66.62] DG
65.95 RG

9+71.00, 0' RT
63.87 INV

10+11.00, 0' RT
63.87 INV

10+80.48, 0' RT
[67.49] DG
66.82 RG

10+51.00, 0' RT
63.87 INV

13+02.12 0' RT
[64.05] DG
63.38 RG

58.51 DG

14+01.64, 0' RT
53.43 INV

14+42, 0' RT
53.43 INV

14+82.78, 0' RT
53.43 INV

14+97.62
0' RT
[55.58] DG
54.91 RG

TEMPORARY DRAINAGE CHANNEL

| | | |

VILLAGE 24
PARCEL L
APN 137-22-000-015

VILLAGE 24
PARCEL M
APN 137-22-000-015

VILLAGE 24
PARCEL K
APN 137-22-000-015

STATION 15+50 MATCHLINE SEE SHEET G4

MATCHLINE STATION 26+00 SEE SHEET G6

10+00.00
POSSIBLE FUTURE
PARCEL ENTRY L

18+85.16
CROSSBRIDGE DR.

18+16.26, 33.50' LT
PCC

19+34.46, 30.57' RT
PRC

21+53.20, 22.00' LT
PT

21+19.42, 22.00' RT
PT

10+00.00
POSSIBLE FUTURE
PARCEL ENTRY M & K

24+1.23
CROSSBRIDGE DR.

PT = 18+73.25

67.00' ROW

44.00' ROW

7.0%

2.0%

-7.00%

600.00' VC
HIGH POINT ELEV = 3567.49
HIGH POINT STA = 10+75
PVI STA = 13+00
PVI ELEV = 3570.12
A.D. = -8.00
K = 75.00

EVC 16+00
DG 3549.12

FUT. DESIGN GRADE @ ℄
ROUGH GRADE @ ℄
EX. GRADE @ ℄

EX. GRADE @ ℄ (TYP)
FUT. DESIGN GRADE @ ℄ (TYP)

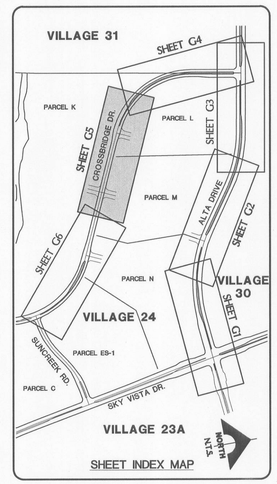
CROSSBRIDGE DRIVE (Public)

SCALE: HORIZ. 1" = 40'
VERT. 1" = 8'

15+50	16+00	17+00	18+00	19+00	20+00	21+00	22+00	23+00	24+00	25+00	26+00
[3552.45]	(3554.4) [3549.12]	(3558.8) [3545.62]	(3558.5) [3542.12]	(3554.9) [3538.62]	(3550.0) [3535.12]	(3545.6) [3531.62]	(3541.5) [3528.12]	(3537.0) [3524.62]	(3533.2) [3521.12]	(3528.2) [3517.62]	(3523.1) [3514.12]	(3519.0) [3510.62]	(3514.9) [3507.12]	(3510.4) [3503.62]	(3507.2) [3500.12]	(3506.0) [3496.62]	(3504.2) [3493.12]	(3501.9) [3489.62]	(3497.8) [3486.12]	(3493.9) [3482.62]	(3489.5)

NORTH

SCALE 40 0 40 80 FEET



NOTE

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BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
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ENGINEER - STATE OF NEVADA
VICKI D. MAIR-JERRISION
No. 13079
PROFESSIONAL ENGINEER
DATE 5-14-14

G.C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
1555 S. RAINBOW BOULEVARD - LAS VEGAS, NV 89146
T: 702.804.2000 - F: 702.804.2299 - GCWALLACE.COM
LAS VEGAS - SACRAMENTO - RENO

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 14:02:02

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

CROSSBRIDGE DRIVE
ROUGH GRADING PLAN AND PROFILE 2

DRAWING
G5
51 OF 82 SHTS

CLV DRAWING NO. XXXXX

emarjerrison

F:\Projects\620\62024-221\DWG\Production\Unit2 TDS Plans\24U2cG05-51.dwg

gcw2436.dwg 080712.dn

VILLAGE 24
PARCEL N
APN 137-22-000-015

VILLAGE 24
PARCEL M
APN 137-22-000-015

VILLAGE 24
PARCEL ES-1
APN 137-22-000-015

VILLAGE 24
PARCEL K
APN 137-22-000-015

MATCHLINE STATION 26+00 SEE SHEET G5

CROSSBRIDGE DR.

10+00.00 POSSIBLE FUTURE PARCEL ENTRY N

28+55.22, 22.00' LT PC

29+63.97, 24.96' LT PRC

28+43.10, 22.00' RT PC

30+10.43, ' RT PCC

RIPRAP D_{50}= 6" THICKNESS=12"

RIPRAP D_{50}=8" THICKNESS=16"

TEMPORARY DITCH

TEMPORARY DIVERSION BERM

TEMPORARY DRAINAGE INLET

35+30, 24.07' RT
32.96 INV 5'X5' INLET

35+12, 91' RT
51.0 TOP OF BERM

34+83.47, 53.62' LT
46.8 INV DITCH

34+95.03
51.92' LT
48.7 TB

45.1' @ 1%
N44°26'10"E

57.1' @ 1%
N44°26'10"E

35+03.74, 0.44' LT
48.2 FG, 48.2 INV

35+11.50
10.23' LT
48.2 FG

35+95.43, 33.50' LT
PCC, 45.22 TC
END ROUGH GRADE
BEGIN IMPROVEMENTS
SEE SHEETS P1 & P8

35+88
9.33' LT
46.01 TC

35+95.18
8.33' LT
45.76 TC

35+95.18
3.67' LT
46.00 TC

35+69, 33.50' RT
PCC, 45.47 TC
END ROUGH GRADE
BEGIN IMPROVEMENTS
SEE SHT P1

36+43.14 CROSSBRIDGE DR.
TEMPORARY DIVERSION BERM
SEE SHEET U1

72"SD

48"SD

SUNCREEK ROAD

10+00.00 SUNCREEK RD

SEE SHEET G5

NORTH

SCALE 40 0 40 80 FEET

VILLAGE 31

SHEET G4

PARCEL K

PARCEL L

SHEET G3

SHEET G5

CROSSBRIDGE DR.

PARCEL M

ALTA DRIVE

SHEET G2

SHEET G6

PARCEL N

VILLAGE 30

SHEET G1

VILLAGE 24

SUNCREEK RD.

PARCEL ES-1

PARCEL C

SKY VISTA DR.

VILLAGE 23A

SHEET INDEX MAP

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1-800-227-2600
UNDERGROUND SERVICE (USA)

CROSSBRIDGE DRIVE (Public)

SCALE: HORIZ. 1" = 40'
VERT. 1" = 8'

300.00' VC
PVI STA = 30+00
PVI ELEV = 3451.12
A.D. = 6.06
K = 49.50

BVC 28+50 DG 3461.62

EVC 31+50 DG 3449.71

[-7.00%]

[-0.94%]

FUT. DESIGN GRADE @ ℄
ROUGH GRADE @ ℄
EX. GRADE @ ℄

RIPRAP D_{50}= 8" THICKNESS=16"

TEMPORARY DRAINAGE INLET

60.22 LF ~ 72" CLASS III RCP @ -1.0%

35+30, 24.07' RT
32.96 INV 72"SD

35+69 END OF ROUGH GRADING
BEGIN ROAD IMPROVEMENTS
SEE SHEET P1

36+43.14 SUNCREEK RD. ℄
3445.07 DG

EX. GRADE @ ℄ (TYP)
FUT. DESIGN GRADE @ ℄ (TYP)

26+00	27+00	28+00	29+00	30+00	31+00	32+00	33+00	34+00	35+00	36+00	36+50
[3479.12]	(3484.6) [3475.62]	(3479.9) [3472.12]	(3474.7) [3468.62]	(3469.1) [3465.12]	(3463.5) [3461.62]	(3461.8) [3458.37]	(3460.4) [3455.63]	(3458.0) [3453.39]	(3451.4) [3451.66]	(3448.3) [3450.43]	(3450.6) [3449.71]	(3450.4) [3449.24]	(3449.2) [3448.77]	(3449.6) [3448.30]	(3451.4) [3447.83]	(3452.9) [3447.36]	(3453.9) [3446.89]	(3452.0) [3446.42]	(3448.7) [3445.95]	(3445.0) [3445.48]	(3438.5)

3490 3480 3470 3460 3450 3440 3430 3420

ENGINEER - STATE OF NEVADA
VICKI D. MARJERRISON
No. 13079
CIVIL
Exp. 12/31/2015
PROFESSIONAL ENGINEER
DATE: 5-14-14

REV	DATE	DESCRIPTION	AGEN APP	DATE	GCW APP
		TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION			

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 14:02:29

G.C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
1555 S. RAINBOW BOULEVARD - LAS VEGAS, NV 89146
T: 702.804.2000 - F: 702.804.2299 - GCWALLACE.COM
LAS VEGAS - SACRAMENTO - RENO

SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

CROSSBRIDGE DRIVE
ROUGH GRADING PLAN AND PROFILE 3

DRAWING G6
52 OF 82 SHTS

CLV DRAWING NO. XXXXX

emarjerrison

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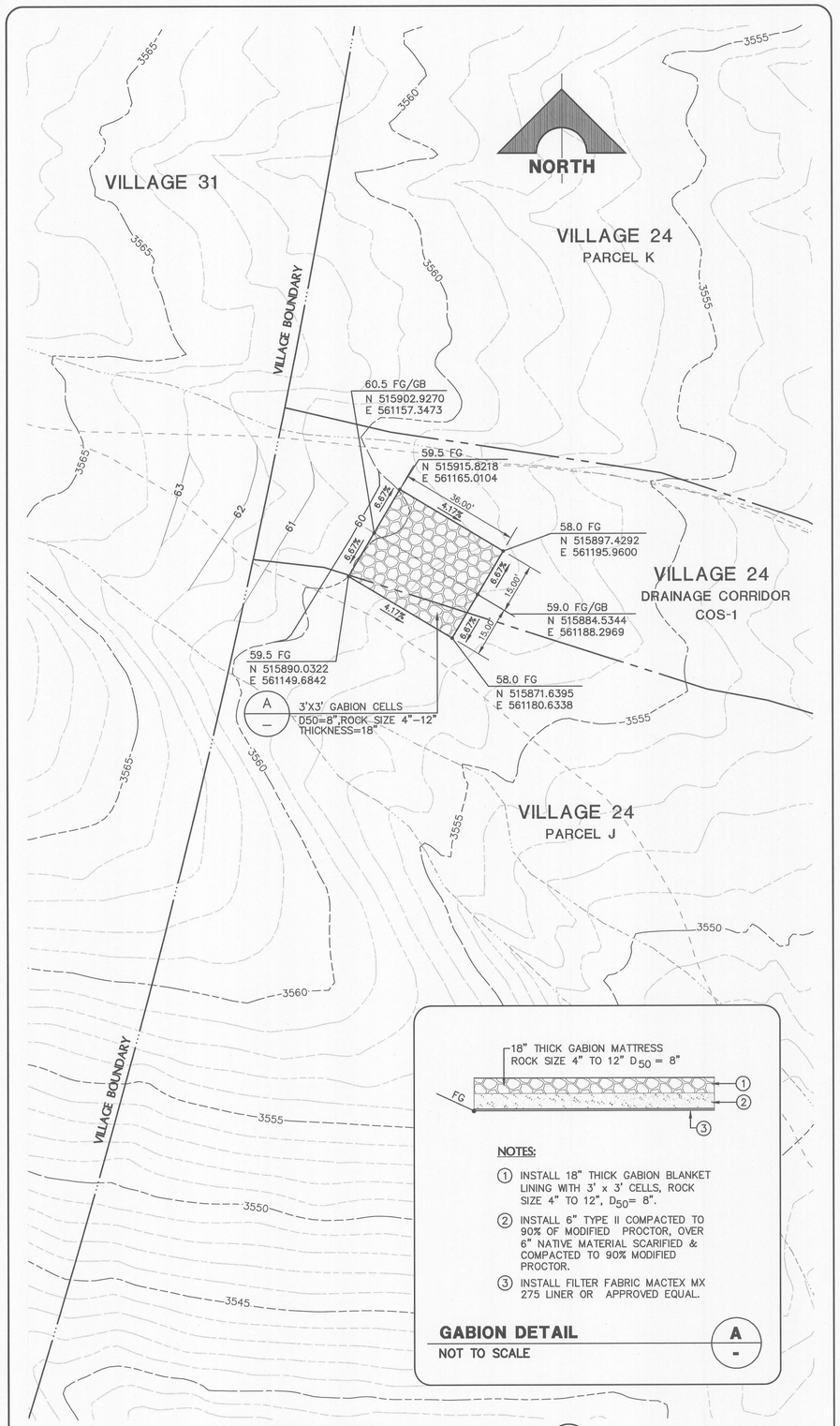
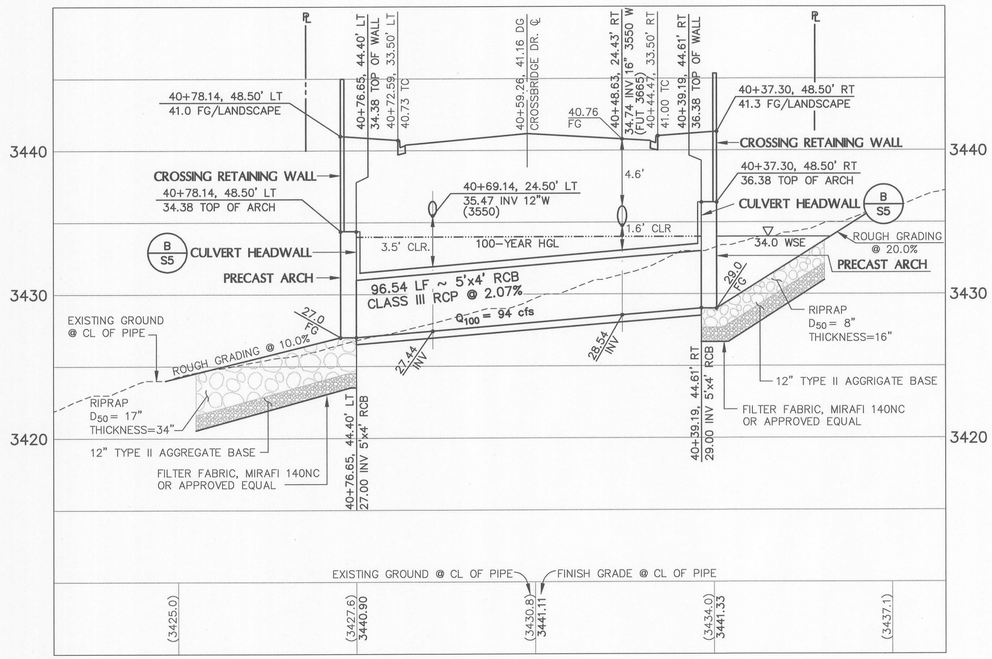


NOTES:

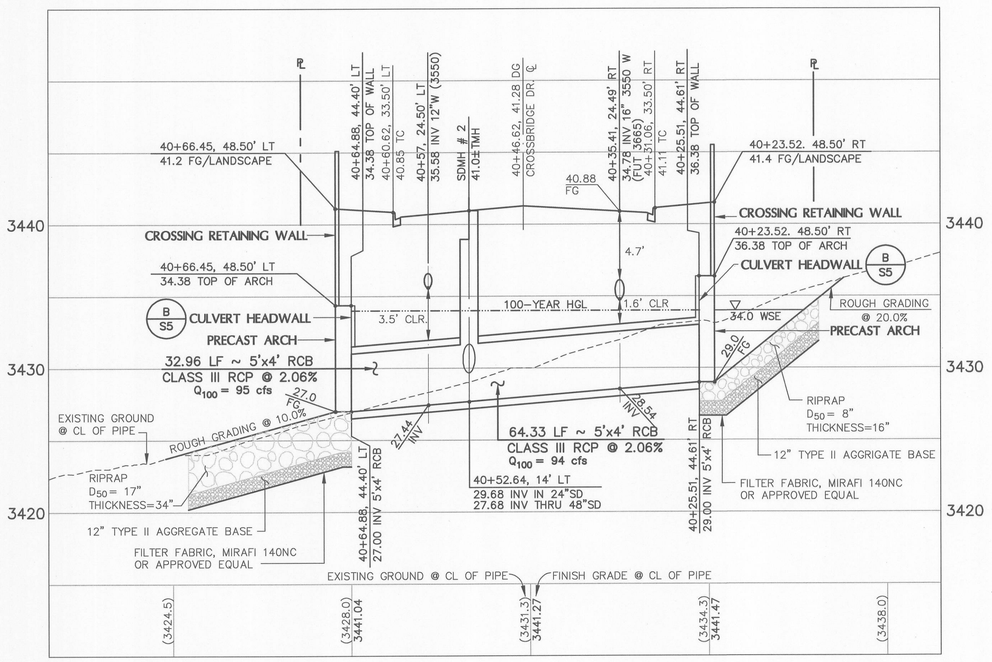
1. INSTALL 18" THICK GABION BLANKET LINING WITH 3' x 3' CELLS, ROCK SIZE 4" TO 12", D_{50}= 8".
2. INSTALL 6" TYPE II COMPACTED TO 90% OF MODIFIED PROCTOR, OVER 6" NATIVE MATERIAL SCARIFIED & COMPACTED TO 90% MODIFIED PROCTOR.
3. INSTALL FILTER FABRIC MACTEX MX 275 LINER OR APPROVED EQUAL.

GABION DETAIL — A / -
NOT TO SCALE

OFFSITE GRADING — 3 / -
SCALE: HORIZ. 1" = 20'

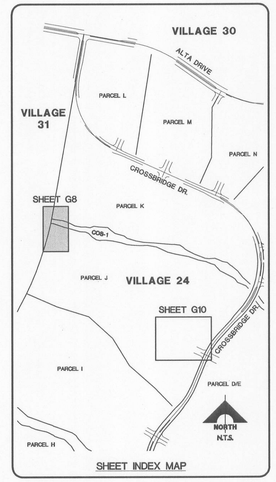


CROSSBRIDGE DRIVE - DRAINAGE CORRIDOR CROSSING — 2 / G7
5'x4' RCB STORM DRAIN LATERAL PROFILE
STATION 40+59.26
SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'



CROSSBRIDGE DRIVE - DRAINAGE CORRIDOR CROSSING — 1 / G7
5'x4' RCB STORM DRAIN LATERAL PROFILE
STATION 40+52.64
SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

20 0 40 40
SCALE FEET



SHEET INDEX MAP

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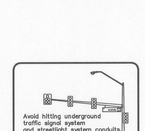
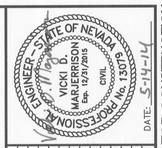




APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE
(PROJECT # 114100)



TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 14:03:26

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ENGINEERS | PLANNERS | SURVEYORS
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SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

OFFSITE GRADING AND
CROSSBRIDGE DR. DRAINAGE CORRIDOR CROSSING DETAILS 1

DRAWING G8
54 OF 82 SHTS

CLV DRAWING NO. XXXXX

amorrison
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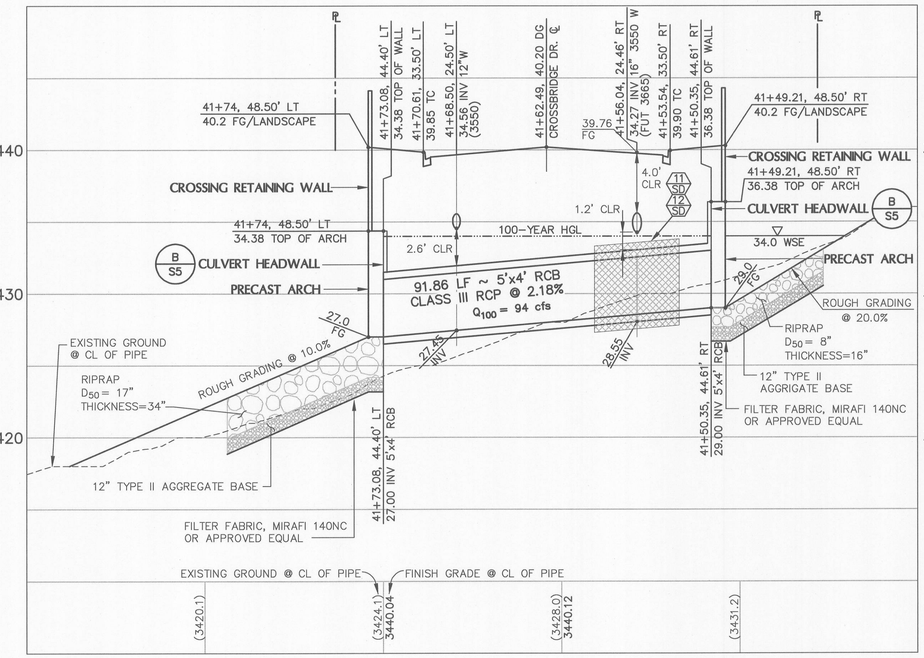
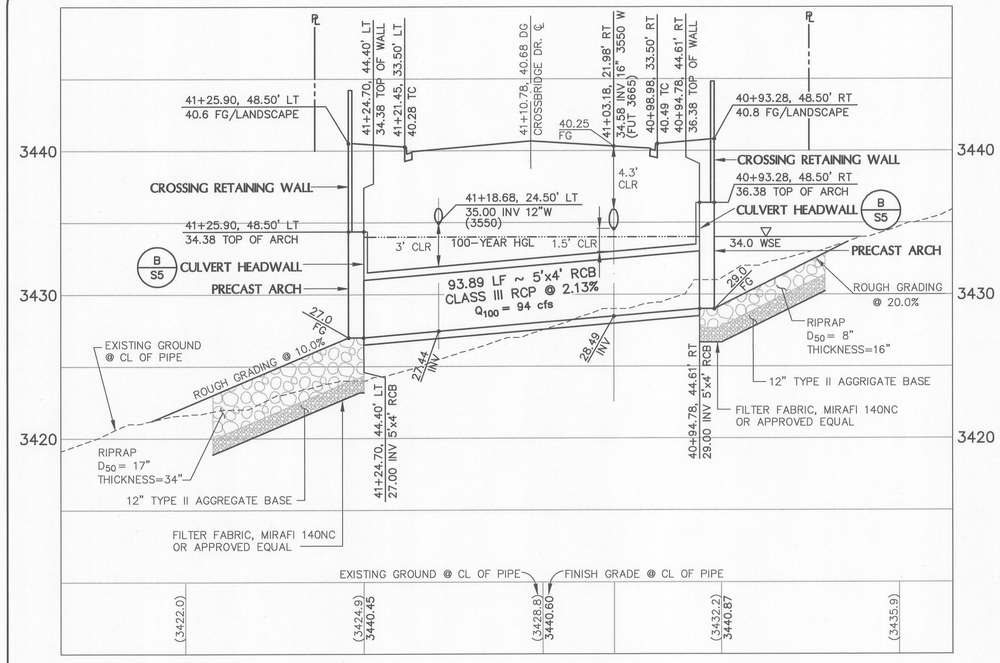


CROSSBRIDGE DRIVE - DRAINAGE CORRIDOR CROSSING (4 / G7)

5'x4' RCB STORM DRAIN LATERAL PROFILE — SCALE: HORIZ. 1" = 20', VERT. 1" = 5'

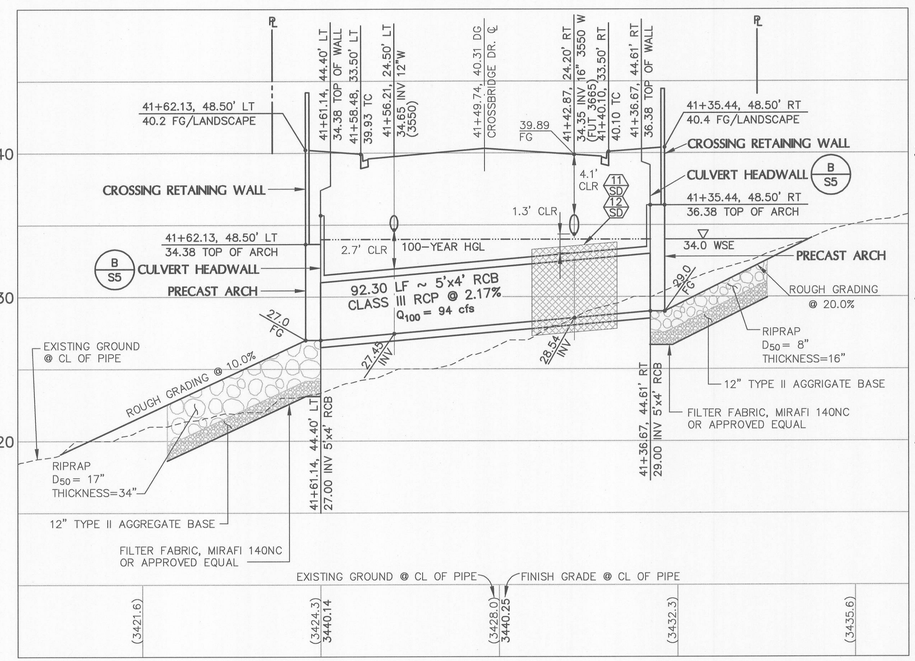
STATION 41+62.49



CROSSBRIDGE DRIVE - DRAINAGE CORRIDOR CROSSING (2 / G7)

5'x4' RCB STORM DRAIN LATERAL PROFILE — SCALE: HORIZ. 1" = 20', VERT. 1" = 5'

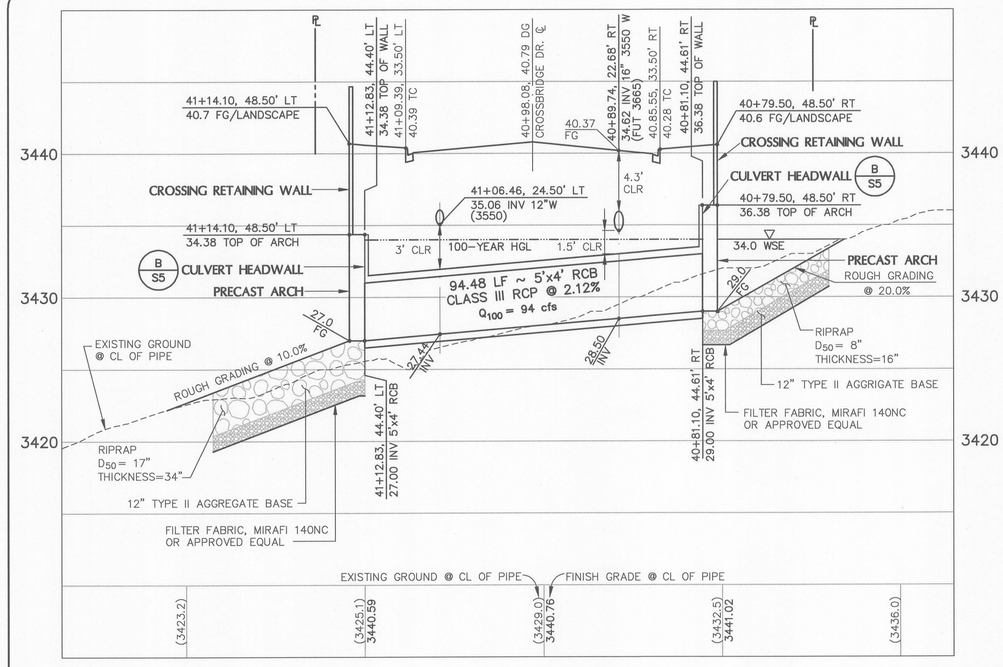
STATION 41+10.78



CROSSBRIDGE DRIVE - DRAINAGE CORRIDOR CROSSING (3 / G7)

5'x4' RCB STORM DRAIN LATERAL PROFILE — SCALE: HORIZ. 1" = 20', VERT. 1" = 5'

STATION 41+49.74



20 0 20 40
SCALE FEET

CROSSBRIDGE DRIVE - DRAINAGE CORRIDOR CROSSING (1 / G7)

5'x4' RCB STORM DRAIN LATERAL PROFILE — SCALE: HORIZ. 1" = 20', VERT. 1" = 5'

STATION 40+98.08

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT (PROJECT # 114100) DATE

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

ENGINEER - STATE OF NEVADA — VICKI D. MARJERISON — No. 12579 — CIVIL — PROFESSIONAL ENGINEER — DATE: 5-14-14

REV	DATE	DESCRIPTION	DATE AGEN APP	DATE GCW APP

PROJECT NO. 62A.24.212

DESIGN: DRAWN: CHECK:

PLOT DATE: 05-14-14

PLOT TIME: 14:03:44

G.C. WALLACE COMPANIES
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LAS VEGAS - SACRAMENTO - RENO

SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

CROSSBRIDGE DRIVE
DRAINAGE CORRIDOR CROSSING DETAILS 2

emarjerison

DRAWING G9

55 OF 82 SHTS

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CLV DRAWING NO. XXXXX

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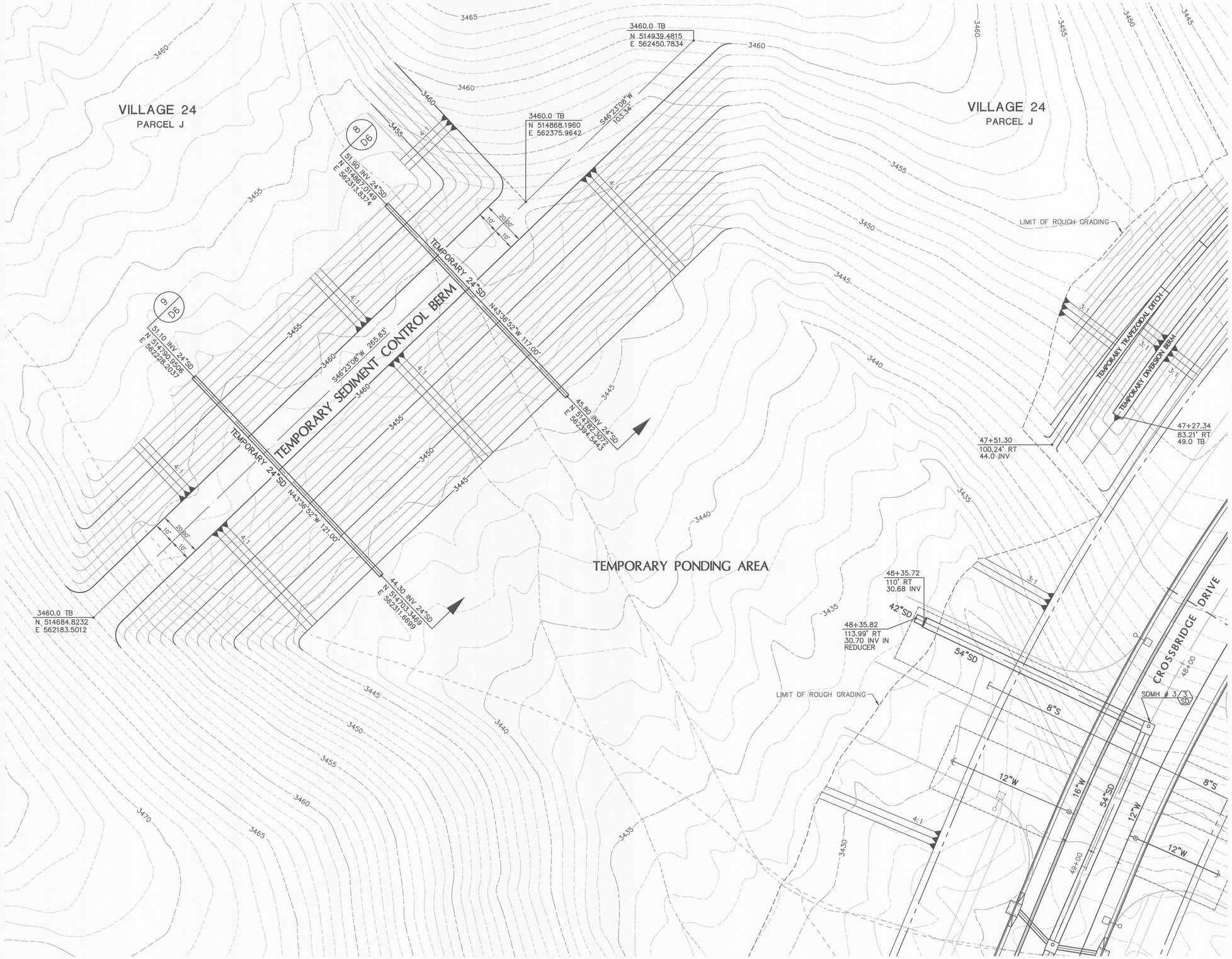

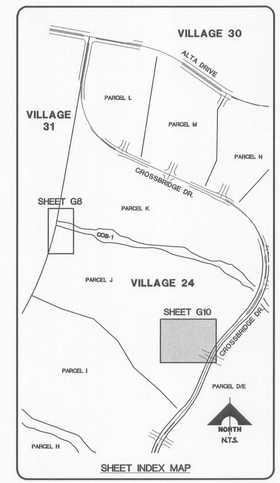

SHEET INDEX MAP

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BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM NO. D36B 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA







TEMPORARY PONDING AREA

SCALE: HORIZ. 1" = 20'

ENGINEER - STATE OF NEVADA
VICKI D. MARJERRISON
No. 13079
PROFESSIONAL ENGINEER
CIVIL
DATE: 5-14-14

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	CGW APP

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 14:04:10

G.C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
1555 S. RAINBOW BOULEVARD · LAS VEGAS, NV 89146
T: 702.804.2000 · F: 702.804.2299 · GCWALLACE.COM
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SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

OFFSITE GRADING
TEMPORARY PONDING AREA

DRAWING
G10
56 OF 82 SHTS

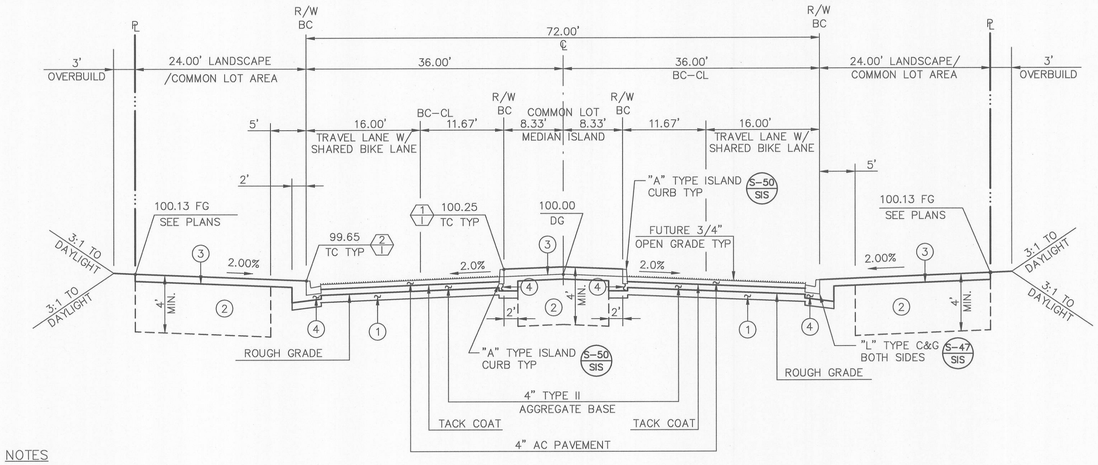
CLV DRAWING NO. XXXXX

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

emarjerrison

F:\Projects\620\62024-221\DWG\Production\Unit2 TDS Plans\24U2cG10-56.dwg

gcw2438.dwg 060712.rfn

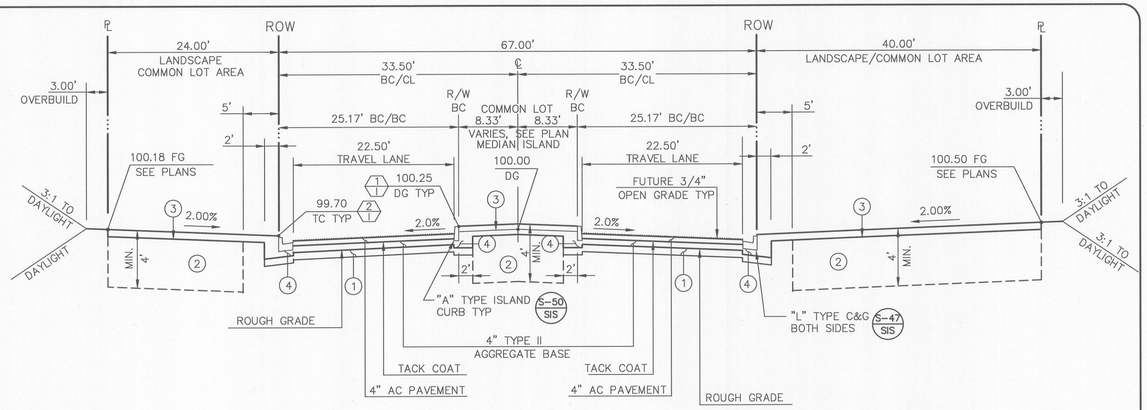


NOTES

1. — 6" TYPE I OR SCARIFY NATIVE 6" AND RECOMPACT TO 95%.
2. — LANDSCAPE AREA: EXCAVATE AND RECOMPACT TO 85% OR RIP ENTIRE AREA TO DEPTH INDICATED.
3. — ROUGH GRADE (R.G.) TO BE 6" BELOW FINISHED GRADE (F.G.) FOR FUTURE LANDSCAPE PURPOSES.
4. — 6" MIN. TYPE II AGGREGATE BASE UNDER CURB AND GUTTER, TYPICAL.

CROSSBRIDGE DRIVE TYPICAL SECTION

(PUBLIC NEIGHBORHOOD COLLECTOR LEVEL 2 WITH SHARED BIKE LANES) NOT TO SCALE — E / —



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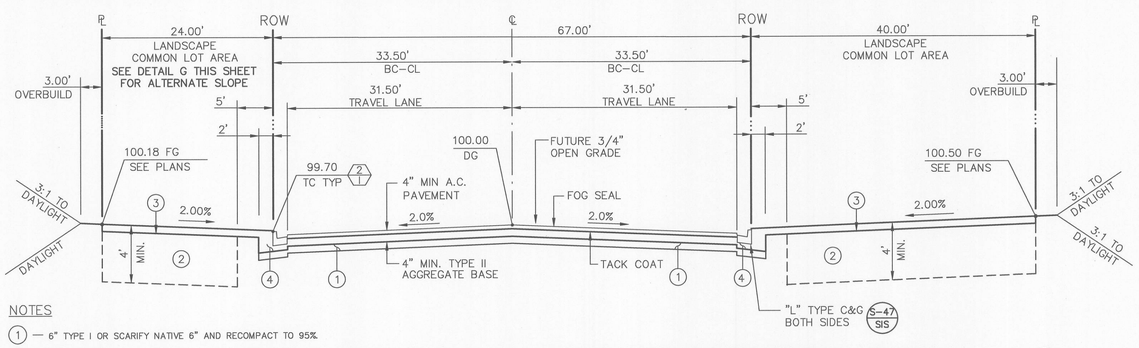
CROSSBRIDGE DRIVE TYPICAL SECTION

(PUBLIC NEIGHBORHOOD COLLECTOR LEVEL 1 WITH SHARED BIKE LANES) NOT TO SCALE — D / —



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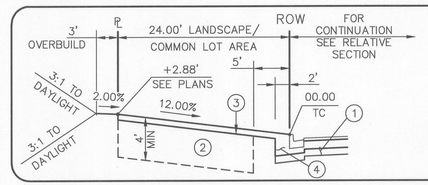
CROSSBRIDGE DRIVE TYPICAL SECTION

(PUBLIC NEIGHBORHOOD COLLECTOR LEVEL 1 WITH SHARED BIKE LANES) NOT TO SCALE — C / —



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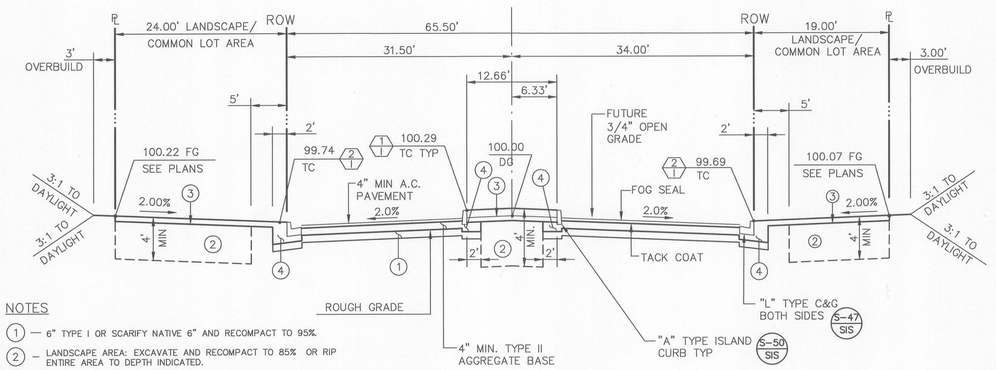
CROSSBRIDGE DRIVE, STA. 42+43 TO 51+00

LANDSCAPE NORTHBOUND NOT TO SCALE — G / —



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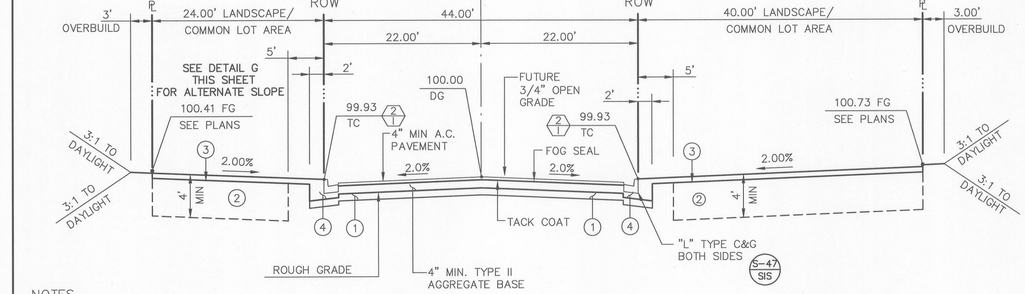
SUNCREEK ROAD TYPICAL SECTION

(PUBLIC NEIGHBORHOOD COLLECTOR LEVEL 1 WITH SHARED BIKE LANES) NOT TO SCALE — F / —



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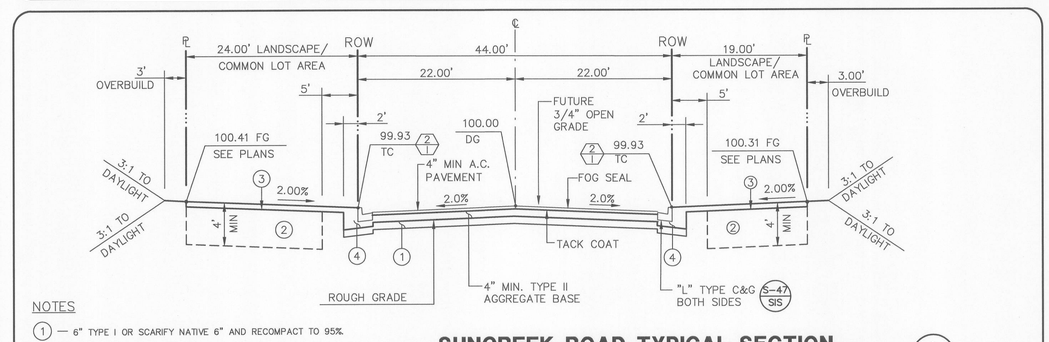
CROSSBRIDGE DRIVE TYPICAL SECTION

(PUBLIC NEIGHBORHOOD COLLECTOR LEVEL 1 WITH SHARED BIKE LANES) NOT TO SCALE — B / —



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SUNCREEK ROAD TYPICAL SECTION

(PUBLIC NEIGHBORHOOD COLLECTOR LEVEL 1 WITH SHARED BIKE LANES) NOT TO SCALE — A / —

ENGINEER - STATE OF NEVADA — VICKI D. MAHFOOD — No. 13079 — PROFESSIONAL ENGINEER — Exp. 12/31/2015 — CIVIL — DATE 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION
	DATE	AGEN APP
	DATE	GOV APP

PROJECT NO. 62A.24.212

DESIGN: DRAWN: CHECK: PLOT DATE: 05-14-14 PLOT TIME: 14:04:18

G.C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
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SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

TYPICAL SECTIONS 1

DRAWING D1

57 OF 82 SHTS

CLV DRAWING NO. XXXXX

emorjerrison

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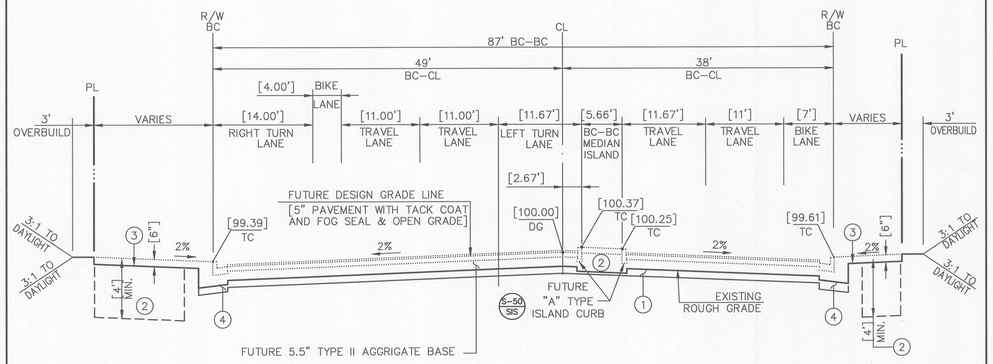

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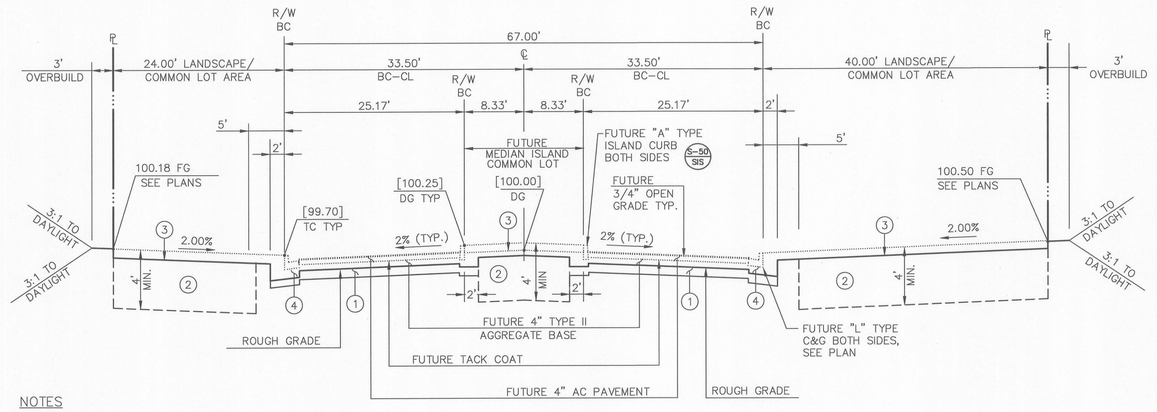
ALTA DRIVE ROUGH GRADE SECTION

(PUBLIC NEIGHBORHOOD ARTERIAL WITH BIKE LANES) NOT TO SCALE — F / —



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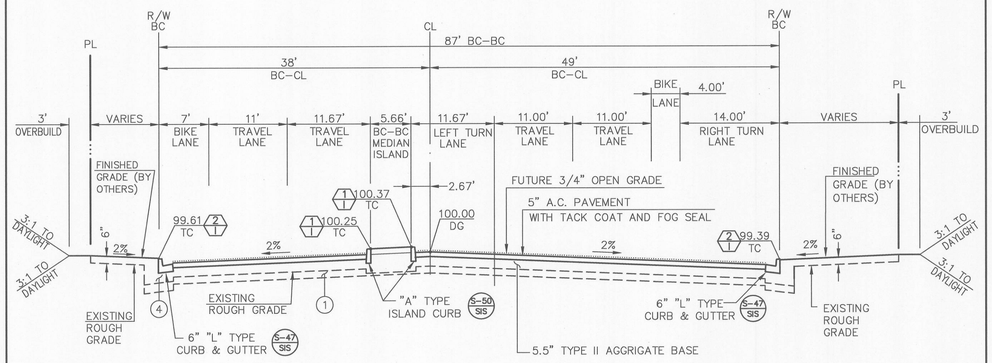
CROSSBRIDGE DR. ROUGH GRADE SECTION

(PUBLIC NEIGHBORHOOD COLLECTOR LEVEL 1 WITH SHARED BIKE LANES) NOT TO SCALE — C / —



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ALTA DRIVE TYPICAL SECTION

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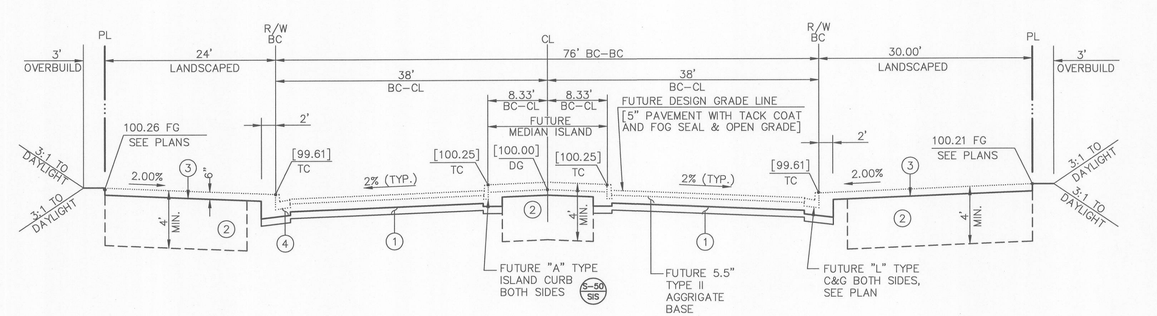

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ALTA DRIVE ROUGH GRADE SECTION

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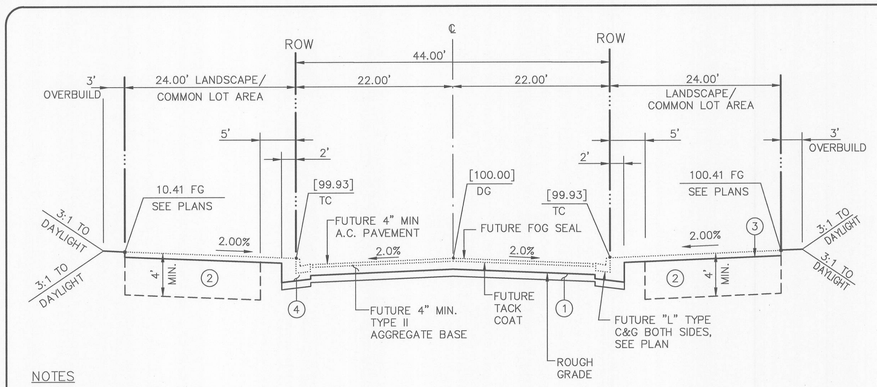

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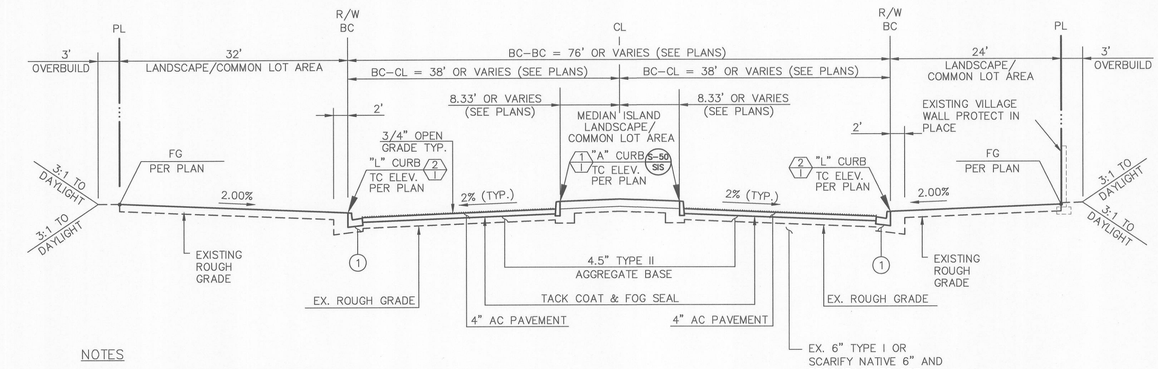
CROSSBRIDGE DR. ROUGH GRADE SECTION

(PUBLIC NEIGHBORHOOD COLLECTOR LEVEL 1 WITH SHARED BIKE LANS) NOT TO SCALE — D / —



NOTES

1. — 6" MIN. TYPE II AGGREGATE BASE UNDER CURB AND GUTTER, TYPICAL.

SKY VISTA DRIVE TYPICAL SECTION

(PUBLIC NEIGHBORHOOD ARTERIAL WITH BIKE LANES) NOT TO SCALE — A / —

ENGINEER - STATE OF NEVADA — VICKI D. MARJERRISON — No. 13079 — CIVIL — Date: 10/31/2015 — PROFESSIONAL ENGINEER — DATE: 5-14-14

REV	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP
	TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION				

PROJECT NO. 62A.24212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 14:04:25

G.C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
1555 S. RAINBOW BOULEVARD · LAS VEGAS, NV 89146
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SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

TYPICAL SECTIONS 2

DRAWING D2
58 OF 82 SHTS

CLV DRAWING NO. XXXXX

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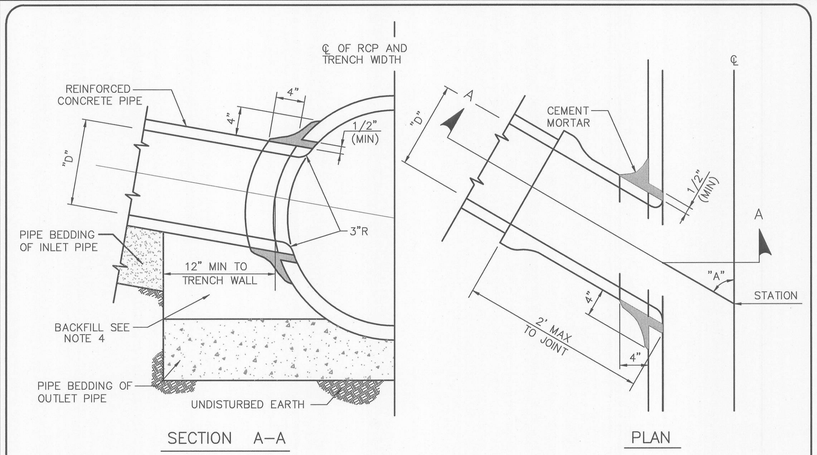
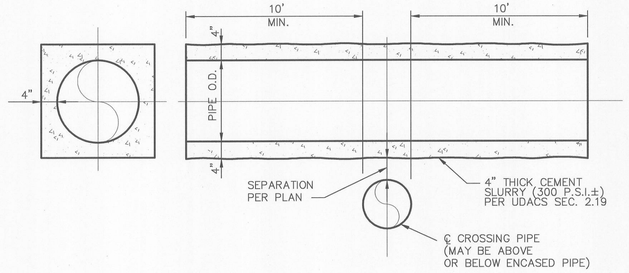
ow435.dwg 050712.sh



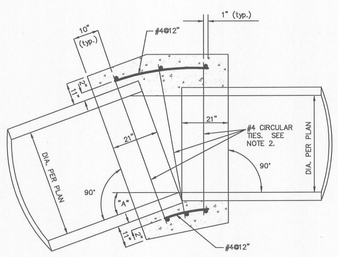
NOTES:

1. ANGLE "A" SHALL BE BETWEEN 45° AND 90° AND "D" SHALL NOT EXCEED 1/2 THE INSIDE DIAMETER OF THE MAIN STORM DRAIN PIPE.
2. THE OPENING INTO THE MAIN STORM DRAIN SHALL BE THE OUTSIDE DIAMETER OF THE INLET PIPE PLUS 1" MIN OR 3" MAX.
3. BURN OR CHIP END OF INLET PIPE FLUSH WITH INNER SURFACE OF MAINLINE PIPE. ROUND EDGES OF MAIN LINE AND INLET PIPE.
4. BACKFILL WITH SLURRY CONTAINING MINIMUM 1 1/2 SACKS P.C./C.Y. SLURRY BACK SHALL NOT EXTEND PAST JOINT LOCATION OF INLET PIPE.

PIPE JUNCTION DETAIL (7)
NOT TO SCALE



CONCRETE ENCASEMENT DETAIL (6)
NOT TO SCALE



PLAN

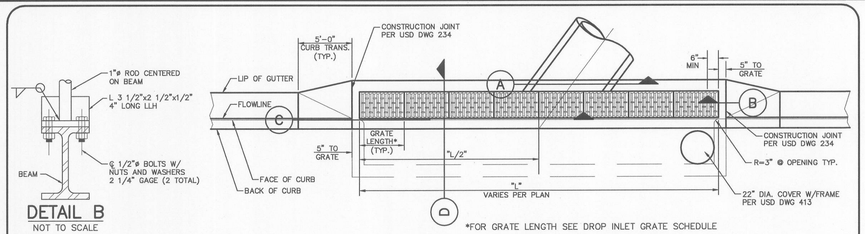
NOTES:

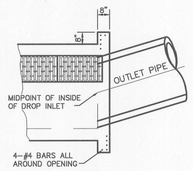
1. WHERE THE SLOPE OF THE UPSTREAM PIPE IS GREATER THAN THE SLOPE OF THE DOWNSTREAM PIPE, JOIN SOFFITS. WHERE THE SLOPE OF THE UPSTREAM PIPE IS LESS THAN THE SLOPE OF THE DOWNSTREAM PIPE, JOIN INVERTS.
2. WHERE THE SPACE BETWEEN THE PIPE EXTREMITIES EXCEEDS 2 1/2 INCHES, THE NUMBER OF CIRCULAR TIES SHALL BE INCREASED TO MAINTAIN A MAXIMUM SPACING OF 6 INCHES CENTER TO CENTER. CIRCULAR TIES SHALL HAVE A DIAMETER 5 INCHES GREATER THAN THE OUTSIDE DIAMETER OF THE LARGER PIPE.
3. CONTRACTOR TO USE CONCRETE COLLAR WHEN CONNECTING TO AN EXISTING STUB WHERE A FIELD ADJUSTMENT IS NEEDED. ANGLE "A" SHALL NOT EXCEED 45°.

CIRCULAR TIES:

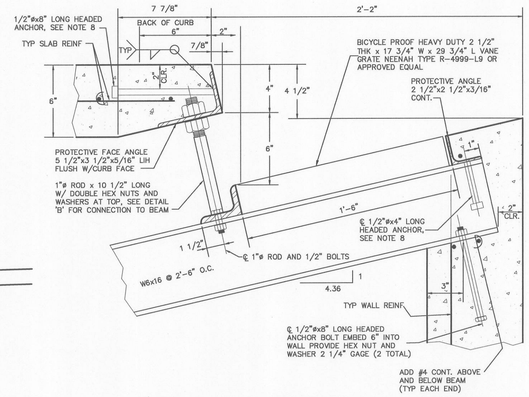
PIPE DIAMETER	SPACE BETWEEN PIPE EXTREMITIES	NO. OF CIRCULAR TIES
21" or less	2 1/2"	3
24" to 30"	2 1/2" or less	3
33" to 57"	2 1/2" or less	4
60" to 66"	2 1/2" or less	5

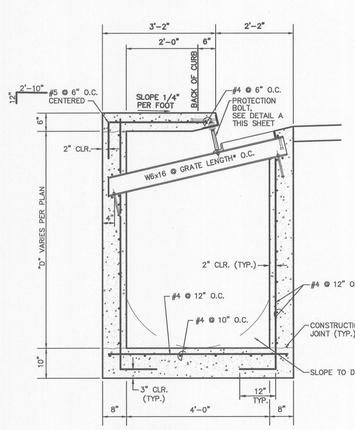
CONCRETE COLLAR DETAIL (5)
NOT TO SCALE

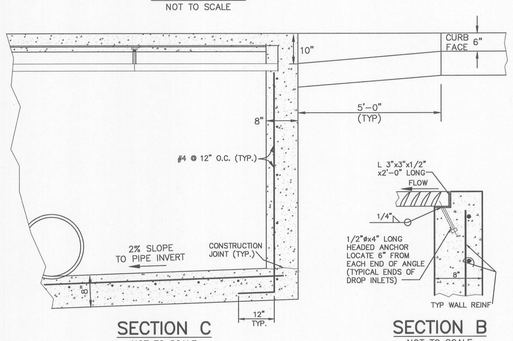




END CONNECTION DETAIL
NOT TO SCALE

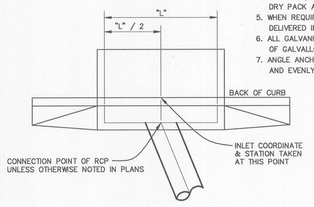






NOTES:

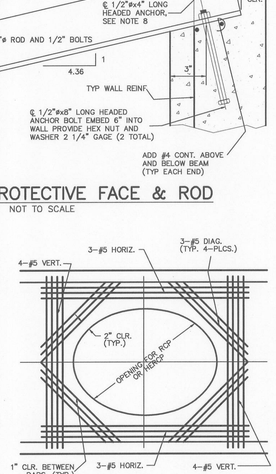
1. CONCRETE SHALL BE CLASS "D" OR "DA".
2. OUTLET PIPE SHALL BE TRIMMED FLUSH WITH INSIDE FACE OF INLET.
3. ALL EXPOSED METALS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
4. PROVIDE 1/2" (MIN.) CLEARANCE ALL AROUND THE STEEL BEAM, DRY PACK AFTER INSTALLATION.
5. WHEN REQUIRED BY THE LENGTH OF OPENING, PLATE ANGLE MAY BE DELIVERED IN SECTIONS AND BUTT WELDED IN PLACE.
6. ALL GALVANIZING DAMAGED BY WELDING SHALL RECEIVE TWO COATS OF GALVALLOY OR EQUAL.
7. ANGLE ANCHORS SHALL BE EMBEDDED MIDPOINT IN EACH ENDWALL AND EVENLY SPACED (MAXIMUM SPACING OF 2').

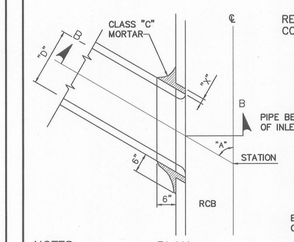


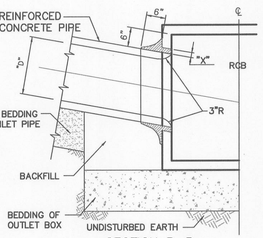
TYPE "CM" DROP INLET (4)
NOT TO SCALE

DROP INLET GRATE SCHEDULE

	STATION/OFFSET	"L"	GRATE LENGTH	NO. OF GRATES
CROSSBROOK	35+80.57 33.50' RT	10.0	2.50'	4
	39+06 33.50' LT	5.0	2.50'	2
	42+11 33.50' RT	5.0	2.50'	2
	42+11 33.50' LT	5.0	2.50'	2
	49+29 22.00' RT	5.0	2.50'	2
	49+33 22.00' LT	5.0	2.50'	2
	57+30, 33.50' RT	7.5	2.50'	3
	57+17, 33.50' LT	7.5	2.50'	3
	62+91, 33.50' RT	10.0	2.50'	4
	62+91, 34.09' LT	10.0	2.50'	4
SUNCREEK	10+73, 22.00' RT	5.0	2.50'	2
	18+07, 34' RT	10.0	2.50'	4
	18+07, 6.33' LT	10.0	2.50'	4
	17+99.91, 31.50' LT	5.0	2.50'	2
SKY VISTA	322+00, 35.00' RT	12.5	2.50'	5
	321+95, 61.05' LT	5.0	2.50'	2
	325+36.51, 43.80' LT	10.0	2.50'	4
	329+92, 38.00' RT	10.0	2.50'	4
	329+92, 38.00' LT	10.0	2.50'	4
	337+04, 38.00' RT	10.0	2.50'	4
	337+04, 38.00' LT	10.0	2.50'	4
	342+50, 38.00' RT	12.5	2.50'	5
	342+50, 49.00' LT	12.5	2.50'	5
	349+47, 47.57' RT	10.0	2.50'	4
	349+47, 46.95' LT	10.0	2.50'	4



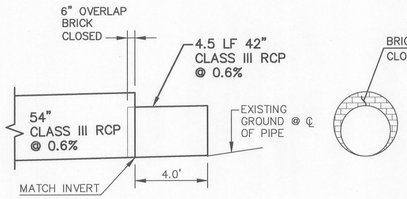




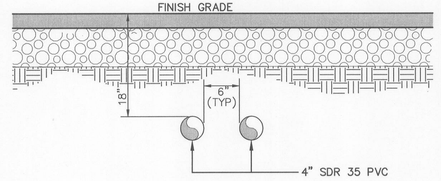
NOTES:

1. ANGLE "A" SHALL BE BETWEEN 60°.
2. DIMENSION "D" SHALL BE EQUAL TO OR LESS THAN 1/2 THE INSIDE DIMENSION OF THE MAINLINE BOX.
3. DIMENSION "X" SHALL BE 1" MINIMUM AND 3" MAXIMUM.
4. BURN OR CHIP END OF INLET PIPE FLUSH WITH INNER SURFACE OF MAINLINE. ROUND EDGES OF MAINLINE AND INLET PIPE.

BOX PENETRATION DETAIL (8)
NOT TO SCALE

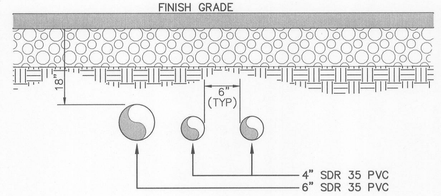


STORM DRAIN REDUCER (3)
REFERENCE DETAIL 5 SHEET D4
NOT TO SCALE



NOTE:
CONTRACTOR TO EXTEND SLEEVES 1' (12") BEHIND BACK OF CURB, TYP.

IRRIGATION SLEEVE (2)
BANK "B"
NOT TO SCALE



NOTE:
CONTRACTOR TO EXTEND SLEEVES 1' (12") BEHIND BACK OF CURB, TYP.

IRRIGATION SLEEVE (1)
BANK "A"
NOT TO SCALE

STATE OF NEVADA — PROFESSIONAL ENGINEER — VICKI D. MARJERRISON — Exp. 12/31/2015 — CIVIL — No. 13578 — DATE: 5-14-14

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GOV APP

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 14:04:34

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SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
MISCELLANEOUS DETAILS 1

DRAWING D3
59 OF 82 SHTS

CLV DRAWING NO. XXXXX

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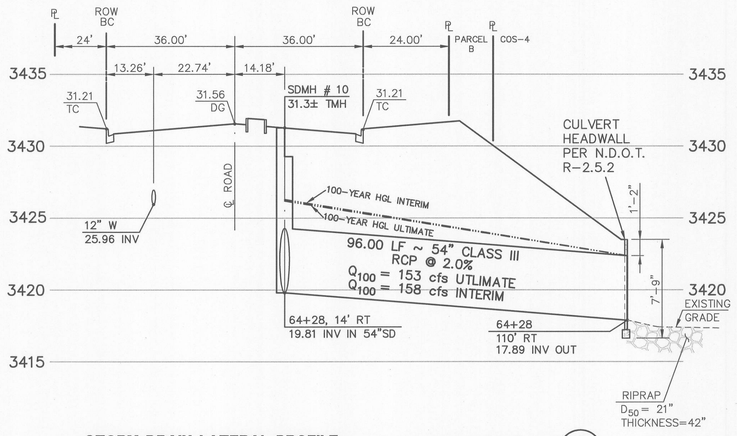
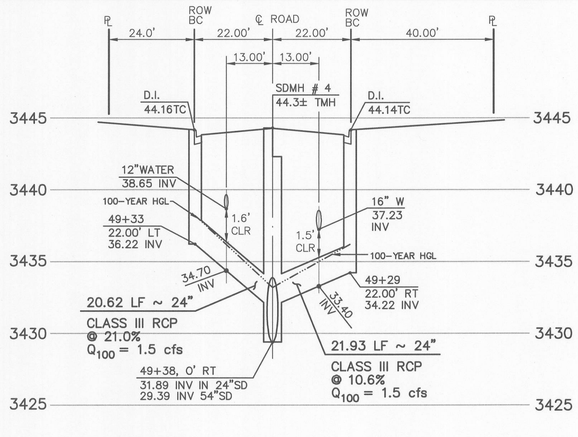
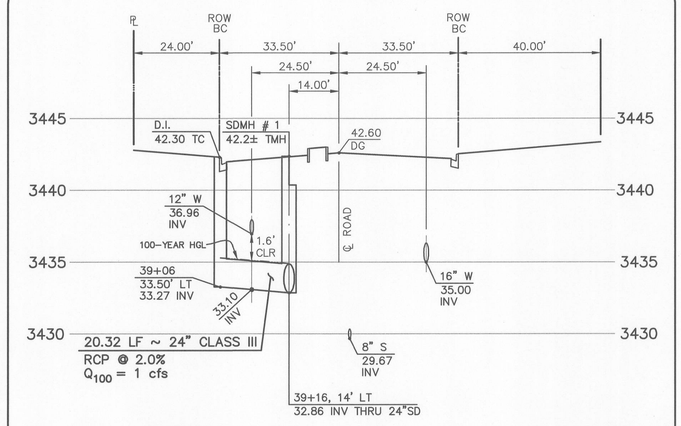


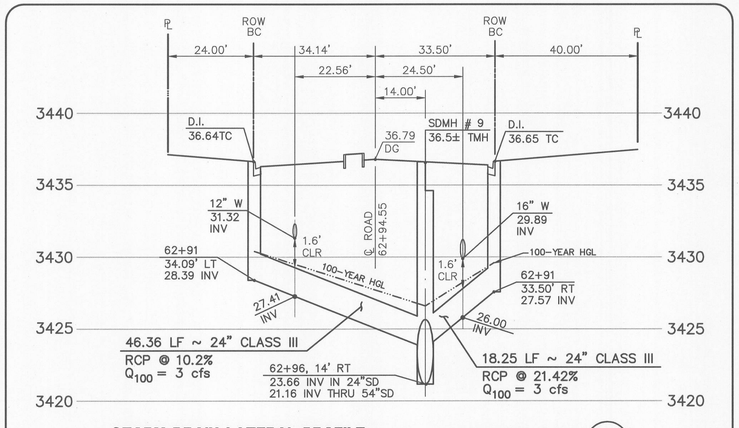
STORM DRAIN LATERAL PROFILE SCALE: HORIZ. 1" = 20' (9)
STATION 64+28 CROSSBRIDGE DR. VERT. 1" = 5' (U7)



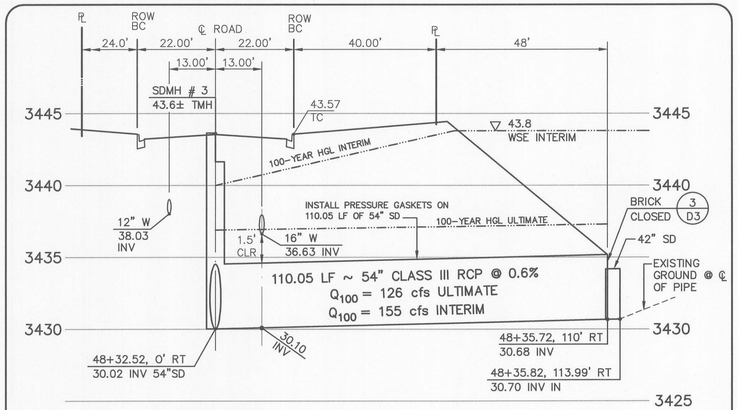
STORM DRAIN LATERAL PROFILE SCALE: HORIZ. 1" = 20' (6)
STATION 49+38 CROSSBRIDGE DR. VERT. 1" = 5' (U4)



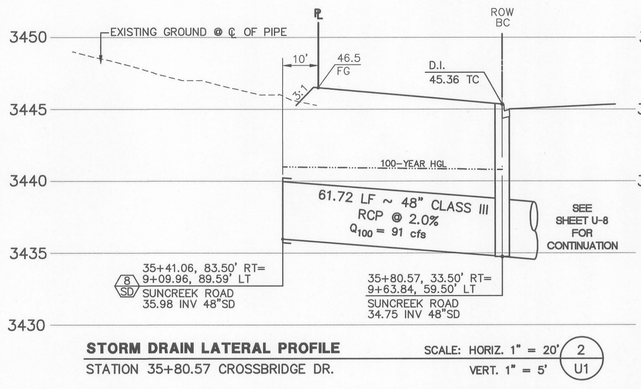
STORM DRAIN LATERAL PROFILE SCALE: HORIZ. 1" = 20' (3)
STATION 39+16 CROSSBRIDGE DR. VERT. 1" = 5' (U2)



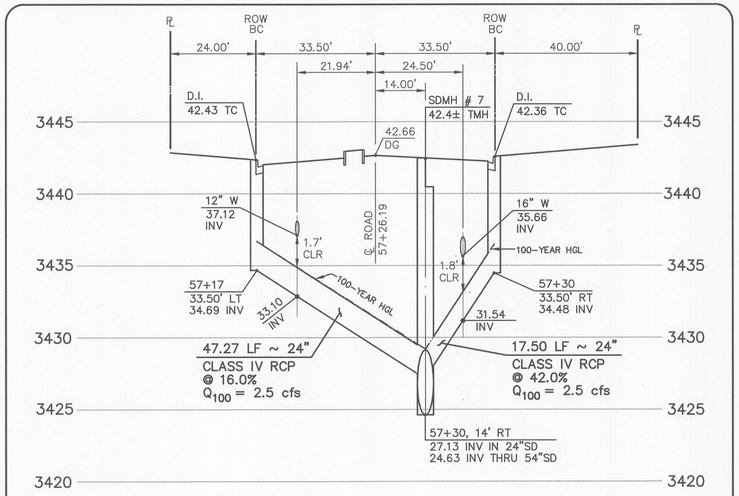
STORM DRAIN LATERAL PROFILE SCALE: HORIZ. 1" = 20' (8)
STATION 62+96 CROSSBRIDGE DR. VERT. 1" = 5' (U6)



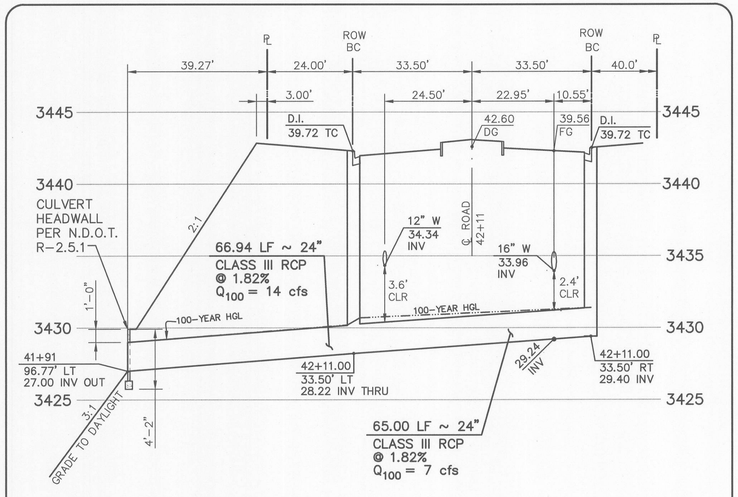
STORM DRAIN LATERAL PROFILE SCALE: HORIZ. 1" = 20' (5)
STATION 48+32.52 CROSSBRIDGE DR. VERT. 1" = 5' (U3)



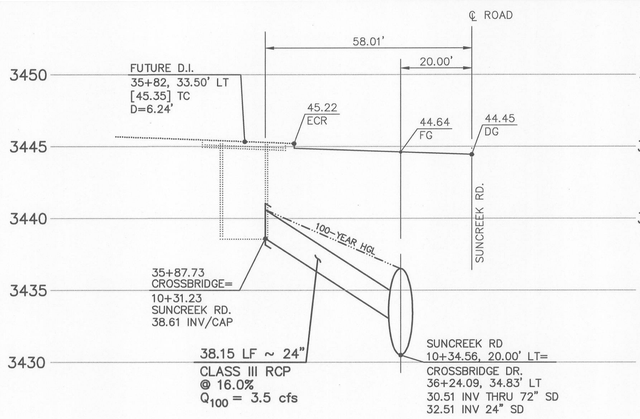
STORM DRAIN LATERAL PROFILE SCALE: HORIZ. 1" = 20' (2)
STATION 35+80.57 CROSSBRIDGE DR. VERT. 1" = 5' (U1)



STORM DRAIN LATERAL PROFILE SCALE: HORIZ. 1" = 20' (7)
STATION 57+30 CROSSBRIDGE DR. VERT. 1" = 5' (U5)



STORM DRAIN LATERAL PROFILE SCALE: HORIZ. 1" = 20' (4)
STATION 42+11 CROSSBRIDGE DR. VERT. 1" = 5' (U2)



STORM DRAIN LATERAL PROFILE SCALE: HORIZ. 1" = 20' (1)
STATION 36+24.09 CROSSBRIDGE DR.= 10+34.56 SUNCREEK ROAD VERT. 1" = 5' (U1)

20 0 20 40
SCALE FEET

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE
(PROJECT # 114100)

ENGINEER - STATE OF NEVADA
VICKI D. MAR-JERRISON
No. 13019
CIVIL
PROFESSIONAL ENGINEER
DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	AGEN APP	DATE	GOV APP

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 14:04:42

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SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
LATERAL DETAILS 1

DRAWING D4
60 OF 82 SHTS

CLV DRAWING NO. XXXXX

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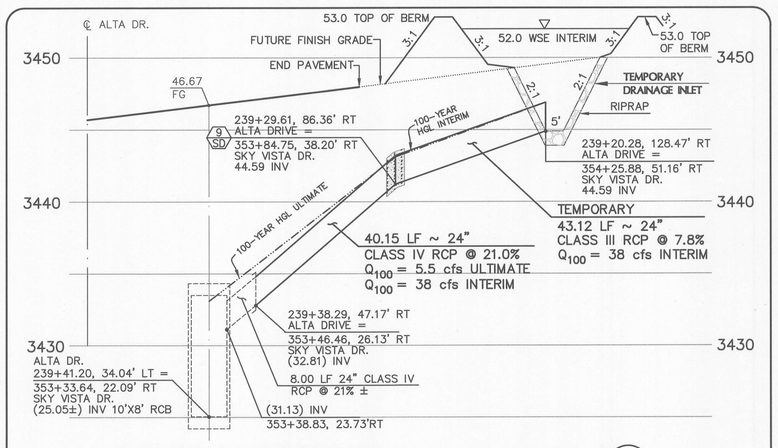
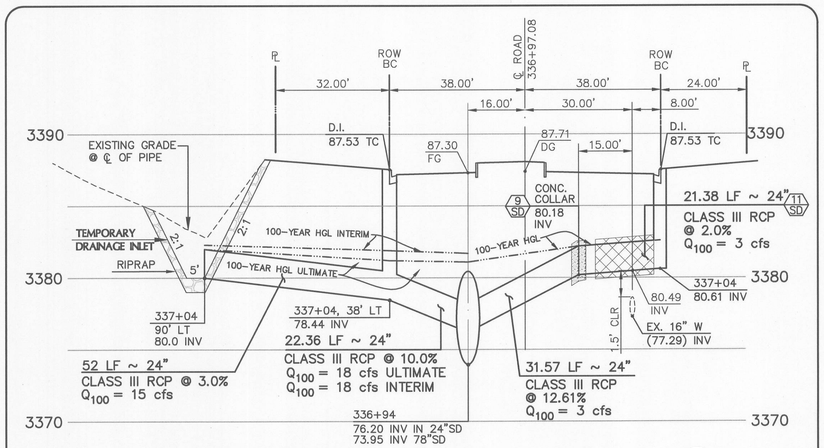


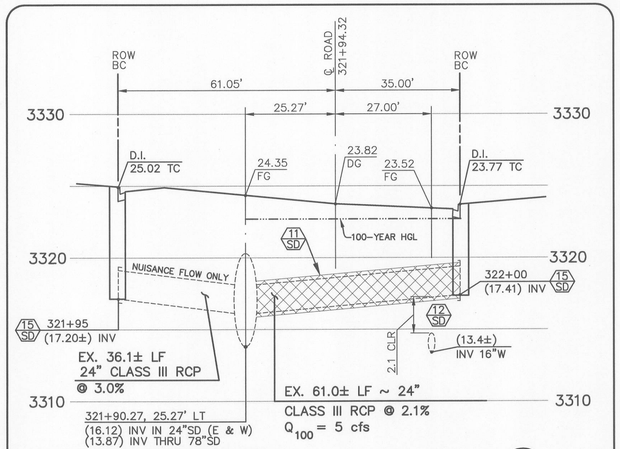
STORM DRAIN LATERAL PROFILE SCALE: HORIZ. 1" = 20' (9) VERT. 1" = 5' (U16)

STATION 239+38.29 ALTA DRIVE =
STATION 353+46.46 SKY VISTA DR.



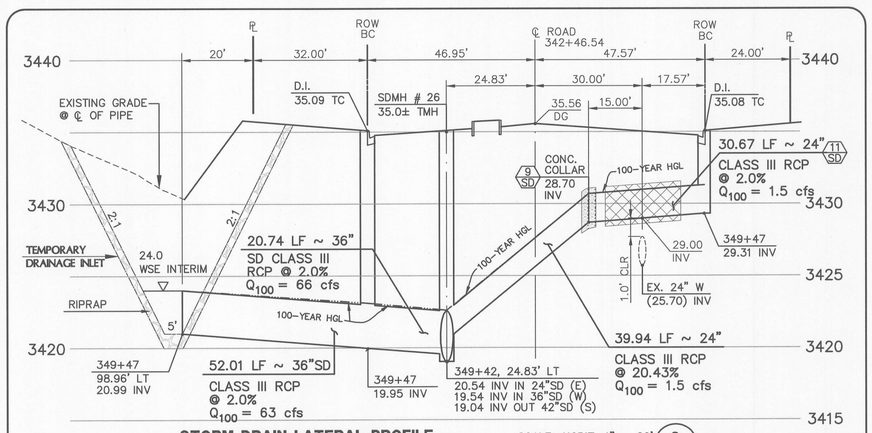
STORM DRAIN LATERAL PROFILE SCALE: HORIZ. 1" = 20' (6) VERT. 1" = 5' (U13)

STATION 336+94 SKY VISTA DR.



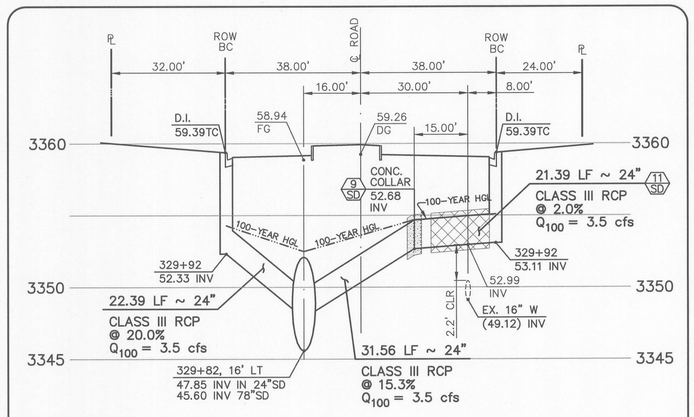
STORM DRAIN LATERAL PROFILE SCALE: HORIZ. 1" = 20' (3) VERT. 1" = 5' (U10)

STATION 321+90.27 SKY VISTA DR.



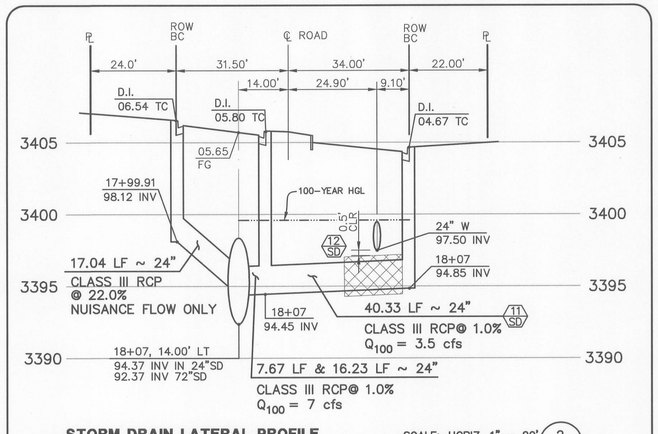
STORM DRAIN LATERAL PROFILE SCALE: HORIZ. 1" = 20' (8) VERT. 1" = 5' (U15)

STATION 349+42 SKY VISTA DR.



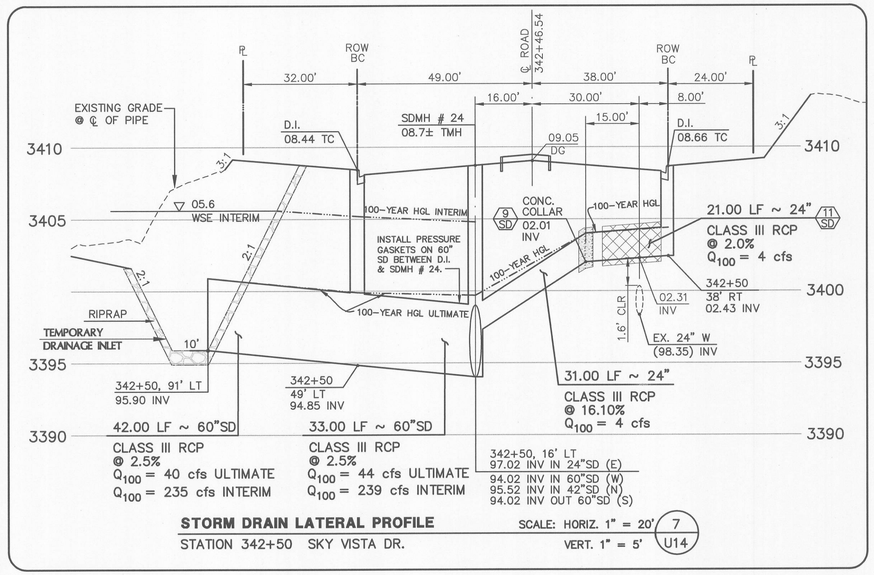
STORM DRAIN LATERAL PROFILE SCALE: HORIZ. 1" = 20' (5) VERT. 1" = 5' (U11)

STATION 329+82 SKY VISTA DR.



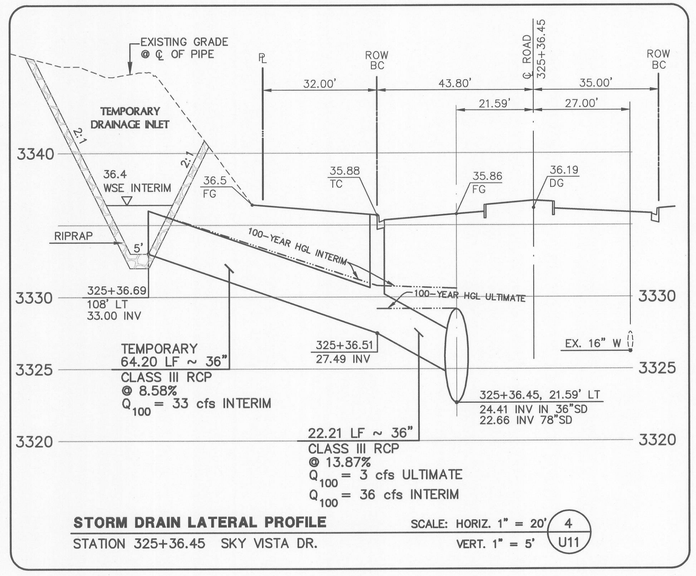
STORM DRAIN LATERAL PROFILE SCALE: HORIZ. 1" = 20' (2) VERT. 1" = 5' (U9)

STATION 18+07 SUNCREEK RD.



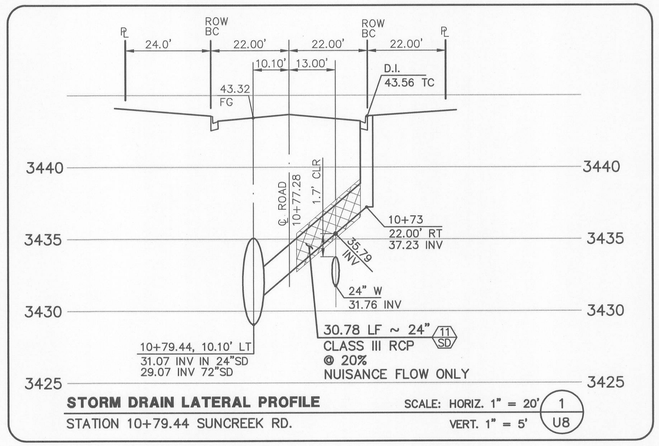
STORM DRAIN LATERAL PROFILE SCALE: HORIZ. 1" = 20' (7) VERT. 1" = 5' (U14)

STATION 342+50 SKY VISTA DR.



STORM DRAIN LATERAL PROFILE SCALE: HORIZ. 1" = 20' (4) VERT. 1" = 5' (U11)

STATION 325+36.45 SKY VISTA DR.



STORM DRAIN LATERAL PROFILE SCALE: HORIZ. 1" = 20' (1) VERT. 1" = 5' (U8)

STATION 10+79.44 SUNCREEK RD.

SCALE: 20 0 20 40 FEET

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE
(PROJECT # 114100)

STATE OF NEVADA — PROFESSIONAL ENGINEER — VICKI D. MARJERRISON — No. 13079 — CIVIL — DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE AGEN APP	DATE GCW APP

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 14:04:49

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SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
LATERAL DETAILS 2

DRAWING D5
61 OF 82 SHTS

CLV DRAWING NO. XXXXX

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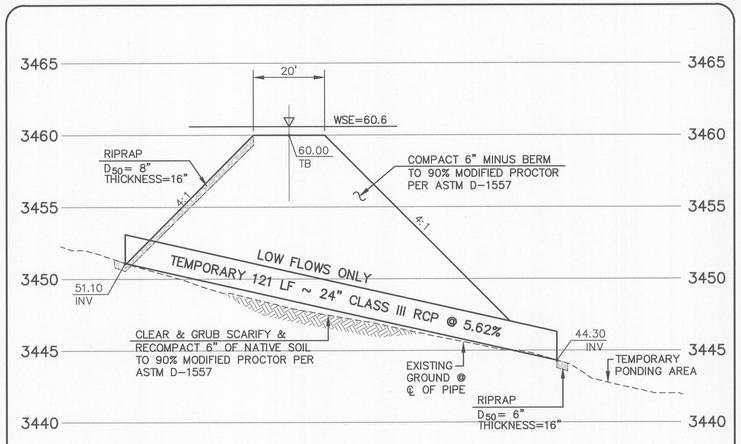
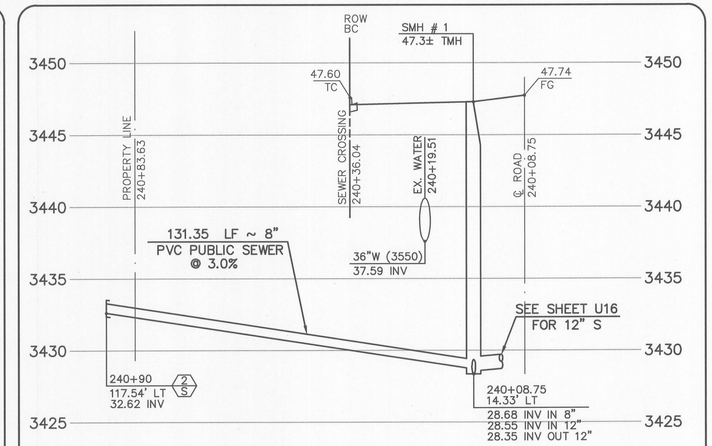
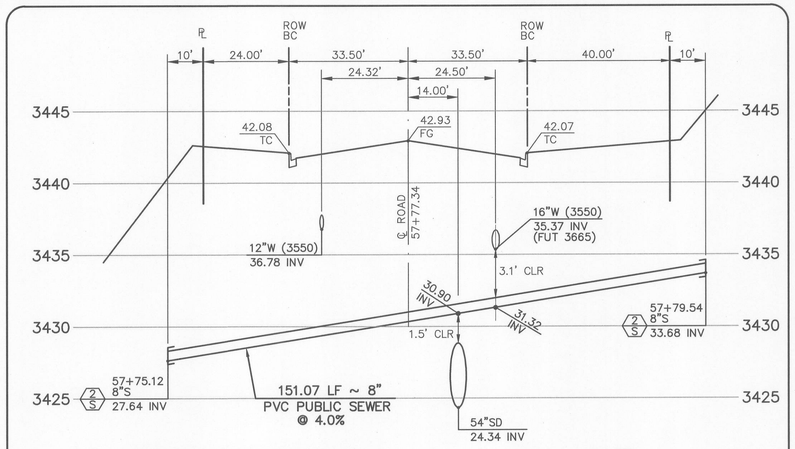


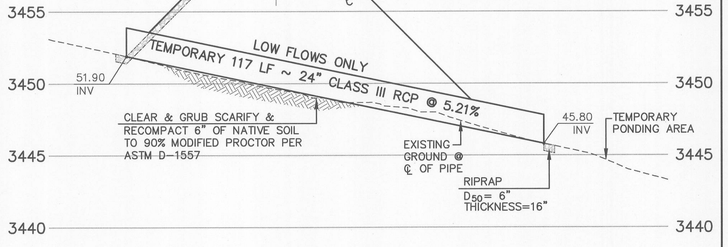
STORM DRAIN LATERAL PROFILE — SCALE: HORIZ. 1" = 20' (9)
TEMPORARY SEDIMENT CONTROL BERM — VERT. 1" = 5' (G10)



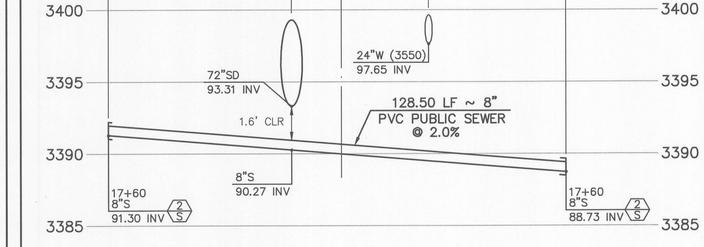
SEWER LATERAL PROFILE — SCALE: HORIZ. 1" = 20' (7)
STATION 240+08.75 ALTA DRIVE — VERT. 1" = 5' (U16)



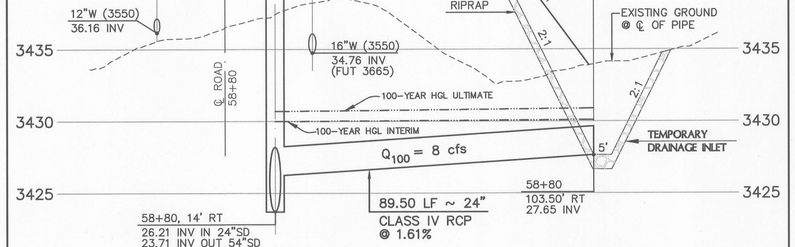
SEWER LATERAL PROFILE — SCALE: HORIZ. 1" = 20' (5)
STATION 57+77.34 CROSSBRIDGE DR. — VERT. 1" = 5' (U5)



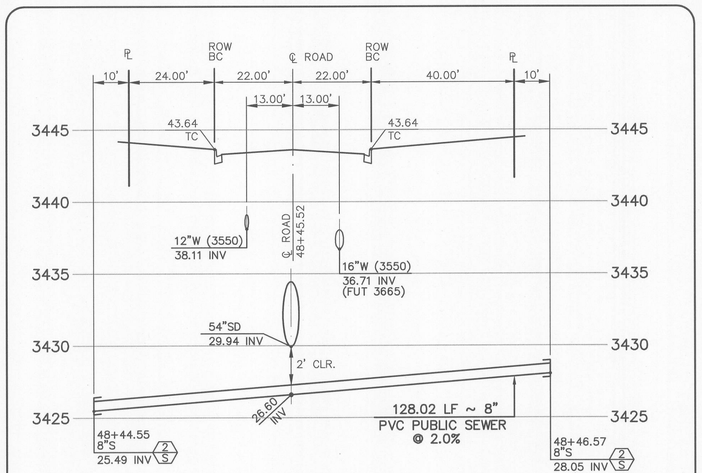
STORM DRAIN LATERAL PROFILE — SCALE: HORIZ. 1" = 20' (8)
TEMPORARY SEDIMENT CONTROL BERM — VERT. 1" = 5' (G10)



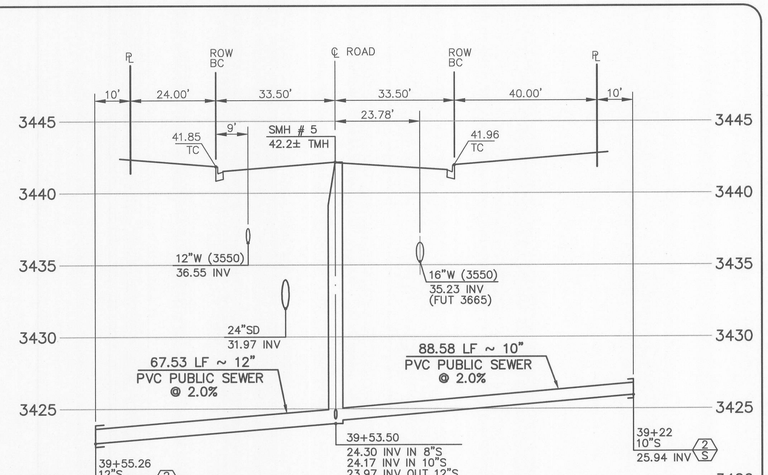
SEWER LATERAL PROFILE — SCALE: HORIZ. 1" = 20' (6)
STATION 17+60 SUNCREEK RD. — VERT. 1" = 5' (U9)



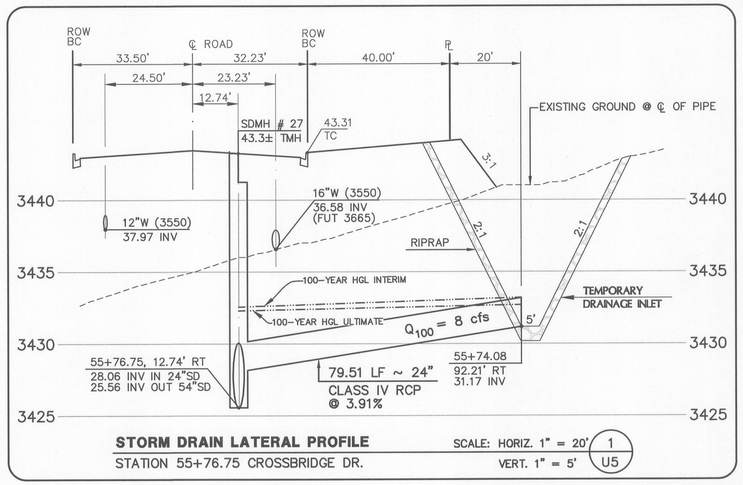
STORM DRAIN LATERAL PROFILE — SCALE: HORIZ. 1" = 20' (2)
STATION 58+80 CROSSBRIDGE DR. — VERT. 1" = 5' (U5)



SEWER LATERAL PROFILE — SCALE: HORIZ. 1" = 20' (4)
STATION 48+45.52 CROSSBRIDGE DR. — VERT. 1" = 5' (U3)



SEWER LATERAL PROFILE — SCALE: HORIZ. 1" = 20' (3)
STATION 39+53.50 CROSSBRIDGE DR. — VERT. 1" = 5' (U2)



STORM DRAIN LATERAL PROFILE — SCALE: HORIZ. 1" = 20' (1)
STATION 55+76.75 CROSSBRIDGE DR. — VERT. 1" = 5' (U5)

20 0 20 40
SCALE FEET

APPROVED FOR CONSTRUCTION
LAS VEGAS VALLEY WATER DISTRICT — DATE
(PROJECT # 114100)

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

STATE OF NEVADA — PROFESSIONAL ENGINEER — VICKI D. MARJERRISON — No. 13013 — CIVIL — DATE 5-14-14

REV	DATE	DESCRIPTION	AGEN APP	DATE	GSW APP	DATE

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 14:04:57

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SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
LATERAL DETAILS 3

DRAWING D6
62 OF 82 SHTS

CLV DRAWING NO. XXXXX

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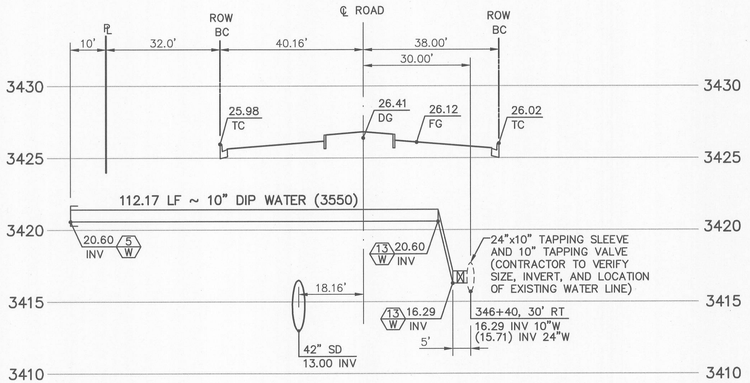
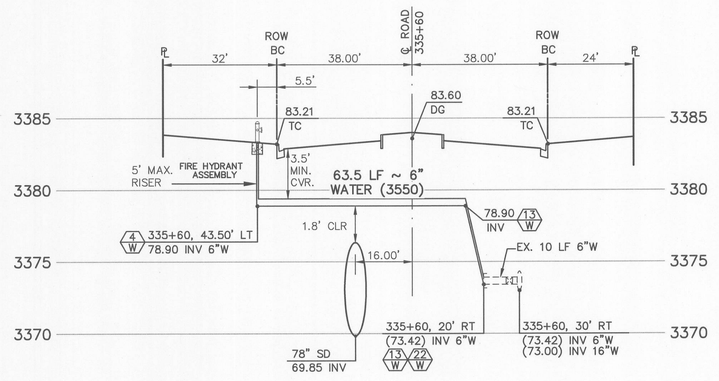
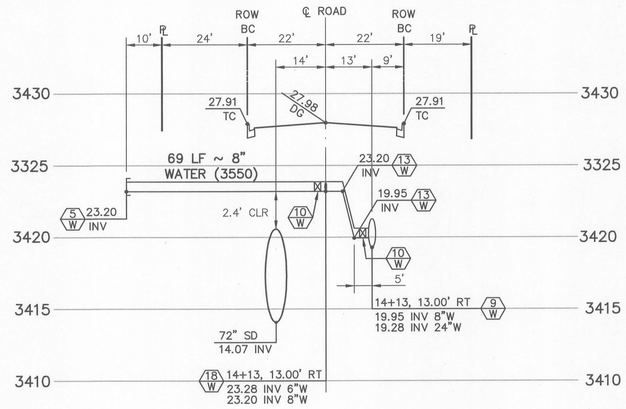


WATER LATERAL PROFILE SCALE: HORIZ. 1" = 20' (8 / U15)
STATION 346+40 SKY VISTA DRIVE VERT. 1" = 5'



WATER LATERAL PROFILE SCALE: HORIZ. 1" = 20' (5 / U13)
STATION 335+60 SKY VISTA DRIVE VERT. 1" = 5'

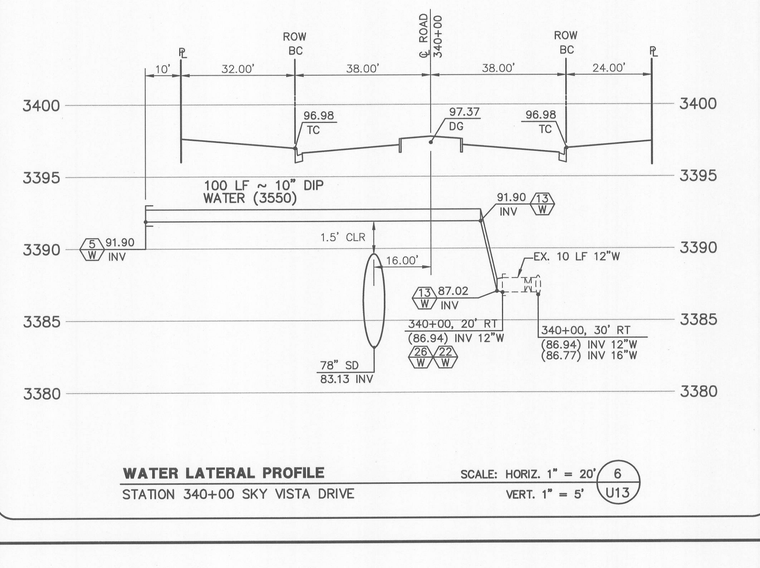


WATER LATERAL PROFILE SCALE: HORIZ. 1" = 20' (3 / U8)
STATION 14+13 SUNCREEK ROAD VERT. 1" = 5'

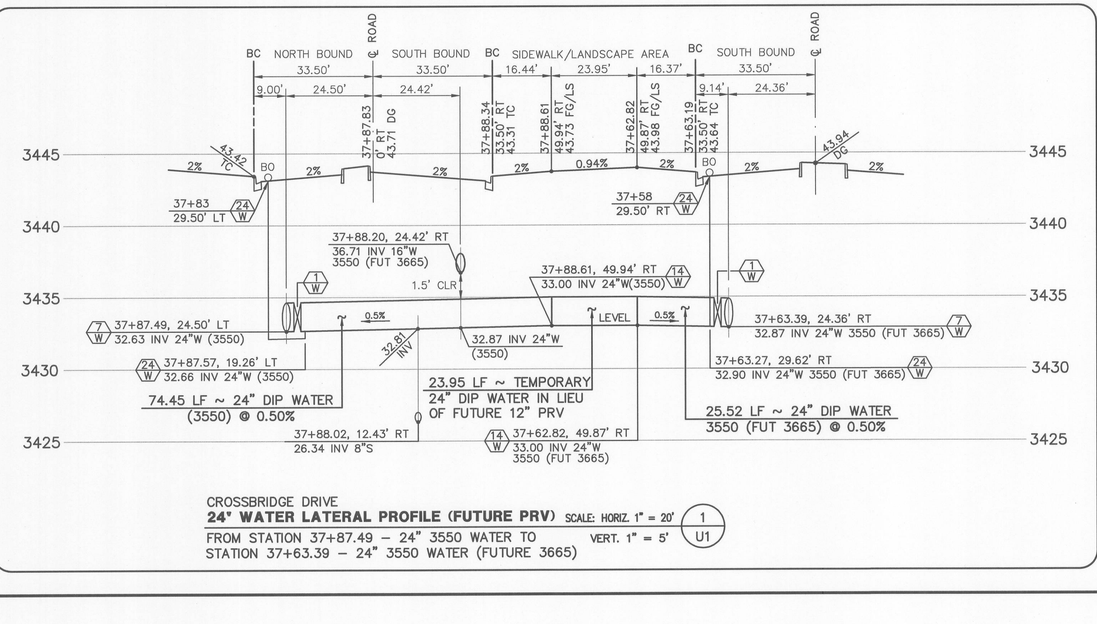
WATER LATERAL PROFILE SCALE: HORIZ. 1" = 20' (7 / U15)
STATION 345+60 SKY VISTA DRIVE VERT. 1" = 5'

WATER LATERAL PROFILE SCALE: HORIZ. 1" = 20' (4 / U11)
STATION 325+49.38 SKY VISTA DRIVE VERT. 1" = 5'

WATER LATERAL PROFILE SCALE: HORIZ. 1" = 20' (2 / U6)
STATION 63+80.61 CROSSBRIDGE DR. VERT. 1" = 5'



WATER LATERAL PROFILE SCALE: HORIZ. 1" = 20' (6 / U13)
STATION 340+00 SKY VISTA DRIVE VERT. 1" = 5'



CROSSBRIDGE DRIVE
24" WATER LATERAL PROFILE (FUTURE PRV) SCALE: HORIZ. 1" = 20' (1 / U1)
FROM STATION 37+87.49 – 24" 3550 WATER TO VERT. 1" = 5'
STATION 37+63.39 – 24" 3550 WATER (FUTURE 3665)

SCALE: 20 0 20 40 FEET

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE
(PROJECT # 114100)

STATE OF NEVADA — VICKI D. MARJERRISON — No. 15679 — PROFESSIONAL ENGINEER — CIVIL
DATE: 5-14-14

REV	DATE	DESCRIPTION	AGEN APP	DATE	GCW APP
		TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION			

PROJECT NO. 62A.24.212
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CHECK:
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PLOT TIME: 14:05:04

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SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
LATERAL DETAILS 4

DRAWING D7
63 OF 82 SHTS

CLV DRAWING NO. XXXXX

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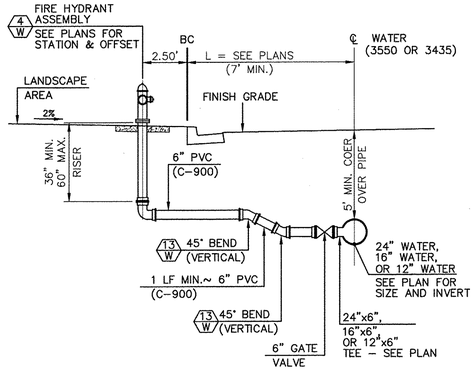
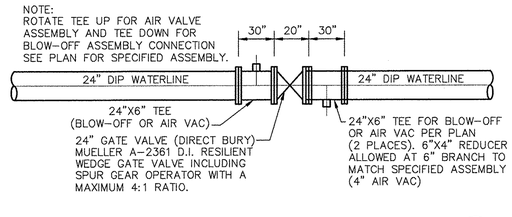
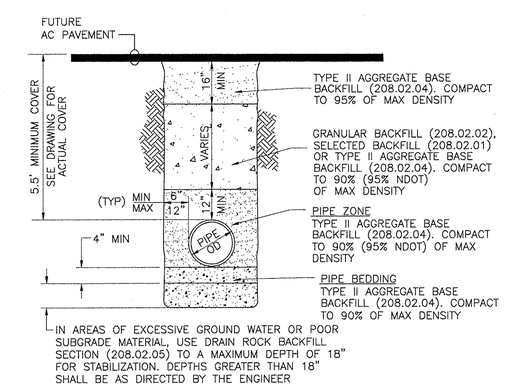


TYPICAL FIRE HYDRANT LATERAL PROFILE — NOT TO SCALE — 3/–



DIRECT BURY 24" GATE VALVE — NOT TO SCALE — 2/–



TRENCH BACKFILL FOR 24" D.I.P. WATER PIPE — NOT TO SCALE — 1/–

WATER MAIN JOINT DEFLECTION (PVC, 4" - 24")

PVC PIPE SHALL BE DEFLECTED AT THE JOINT ONLY. THE MAXIMUM ALLOWABLE DEFLECTION SHALL BE ONE (1) DEGREE PER JOINT WITH A MINIMUM RADIUS OF CURVATURE OF 1,150 FEET PER UDACS 2.06.01 AND 2.06.02

FOR CHANGES IN DIRECTION EXCEEDING THE MAXIMUM ALLOWABLE JOINT DEFLECTION, FITTINGS SHALL BE USED.

NOTE:

INSTALL PIPELINE MARKER BALLS IN TRENCH ABOVE EACH HORIZONTAL ELBOW FITTING, PER UDACS PLATE NO 27

CONDITIONAL APPROVAL OF VALVED OUTLET (6" AND LARGER)

THE WATER PLANS SHOW ONE OR MORE VALVED OUTLETS EXTENDING OUT OF PAVED AREAS. INSTALLATION OF THESE OUTLETS IS ACCEPTABLE; HOWEVER, IF THE OUTLETS ARE INCORRECTLY LOCATED OR NOT USED FOR ANY REASON WHEN THE PROPERTY IS ACCTUALLY DEVELOPED, THE DEVELOPER SHALL ABANDON THE OUTLETS AT ATHE CONNECTION TO THE ACTIVE MAIN IN ACCORDANCE WITH THE DISTRICT'S STANDARDS, AND AT THE DEVELOPER'S EXPENSE. APPROVAL OF THE VALVED OUTLET DOES NOT PROVIDE OR IMPLY A WATER COMMITMENT.

REDUCED PRESSURE PRINCIPLE ASSEMBLY, (1) 1-1/2"

APPROVED REDUCED PRESSURE PRINCIPLE ASSEMBLY(S) SHALL BE INSTALLED PER THE UDACS PLATE NO. 11A. NO WATER SHALL BE TAKEN FROM A SERVICE REQUIRING BACKFLOW PREVENTION UNTIL THE REDUCED PRESSURE PRINCIPLE ASSEMBLY HAS BEEN SUCCESSFULLY TESTED BY THE LVVWD. ANY BLOCK WALL OR OTHER FENCE MATERIAL SHALL BE DESIGNED AND CONSTRUCTED AROUND THE OUTSIDE OF THE EASEMENT(S), TO ALLOW THE DISTRICT DIRECT ACCESS FROM THE ADJACENT RIGHT-OF-WAY. EASEMENTS SHALL BE CLEARLY MARKED OR STAKED PRIOR TO THE START OF CONSTRUCTION.

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT (PROJECT # 114100) — DATE

STATE OF NEVADA — PROFESSIONAL ENGINEER — VICKI M. JERRISON — No. 13017 — CIVIL — Exp. 12/31/2015
DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE	AGEN. APP	DATE	CCW APP

PROJECT NO. 62A.24.212

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PLOT DATE: 05-14-14
PLOT TIME: 14:05:11

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SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

MISCELLANEOUS DETAILS 2

DRAWING D8

64 OF 82 SHTS

CLV DRAWING NO. XXXXX

emorjerrison

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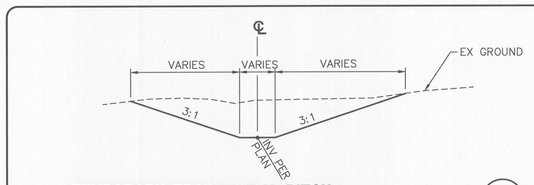
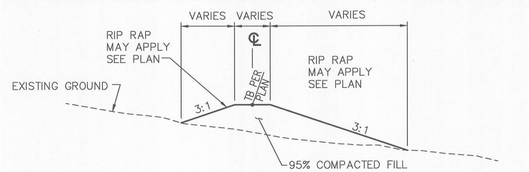
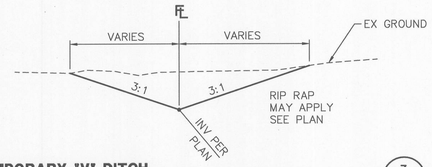


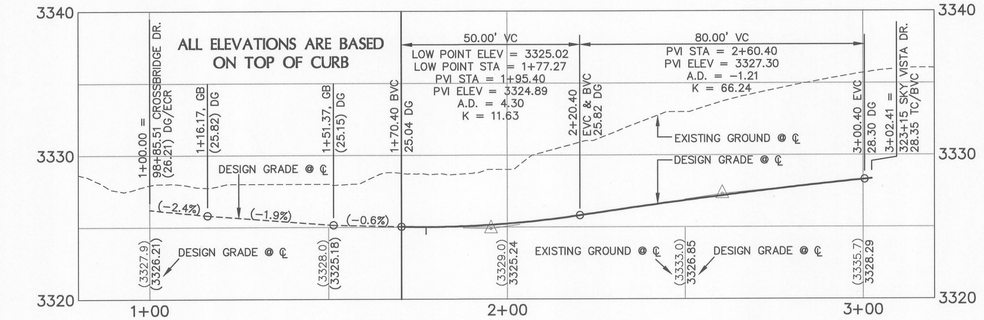
TEMPORARY TRAPEZOIDAL DITCH
TYPICAL SECTION — NOT TO SCALE — 4 / –



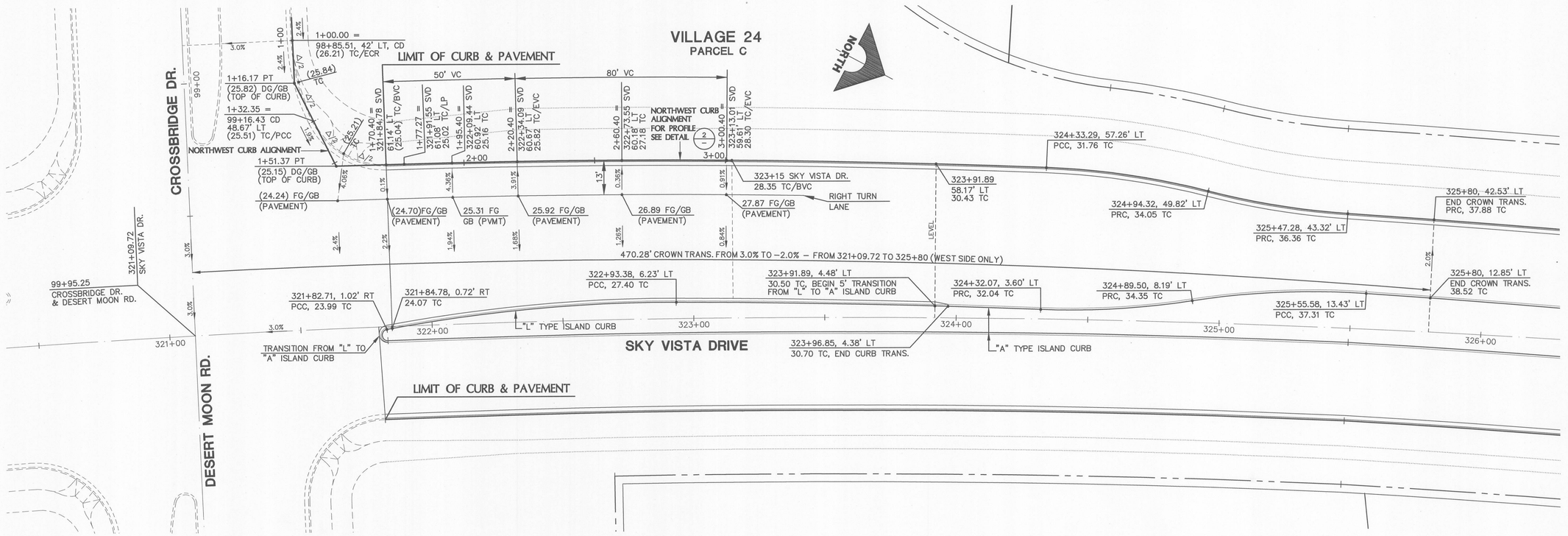
TEMPORARY DIVERSION BERM
TYPICAL SECTION — NOT TO SCALE — 5 / –



TEMPORARY "V" DITCH
TYPICAL SECTION — NOT TO SCALE — 3 / –



NORTHWEST CURB PROFILE
SKY VISTA DR. AND CROSSBRIDGE DR. INTERSECTION
SCALE: HORIZ. 1" = 20' VERT. 1" = 5' — 2 / –



NORTHWEST CURB CONSTRUCTION DETAIL
SKY VISTA DR. AND CROSSBRIDGE DR. INTERSECTION
SCALE: HORIZ. 1" = 20' VERT. 1" = 5' — 1 / –

CLV DRAWING NO. XXXXX

STATE OF NEVADA — ENGINEER — VICKI D. MARJERRISON — No. 13579 — CIVIL — Exp. 10/31/2015 — 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

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PLOT DATE: 05-14-14
PLOT TIME: 14:05:19

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SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
CONSTRUCTION DETAILS

DRAWING D9
65 OF 82 SHTS

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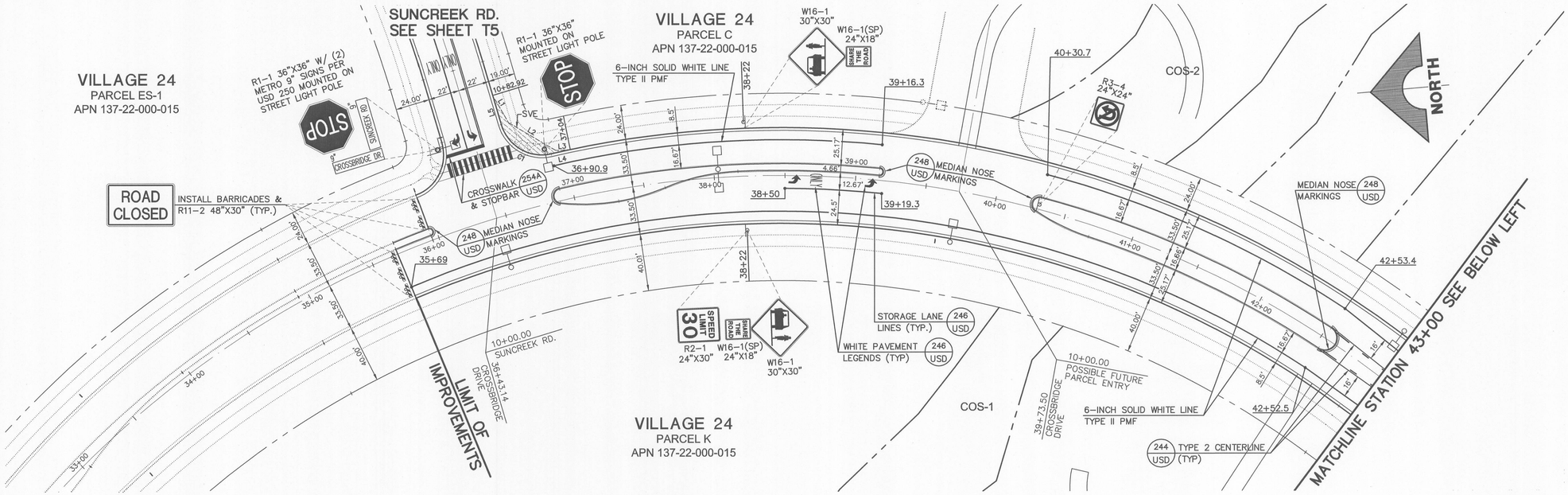

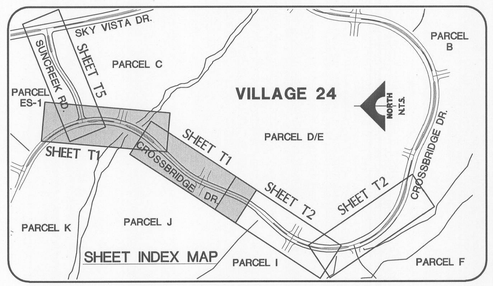

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CROSSBRIDGE DRIVE

SCALE: 1"=40'

40 0 40 80
SCALE FEET

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM NO. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

PRIOR TO INITIATING THE INSTALLATION OF ANY STRIPING, REFER TO THE CITY OF LAS VEGAS TRAFFIC NOTES AND STRIPING GENERAL NOTES.

SEE SHEET T5 FOR TYPICAL SIGN INSTALLATION DETAIL, SIGHT VISIBILITY ZONE LINE & CURVE TABLES, AND STRIPING GENERAL NOTES.

SEE SHEET C3 FOR CITY OF LAS VEGAS TRAFFIC NOTES

ENGINEER - STATE OF NEVADA
VICKI D. MARJERRISON
No. 13019
CIVIL
PROFESSIONAL ENGINEER
DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

PROJECT NO. 62A.24.212
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PLOT DATE: 05-14-14
PLOT TIME: 14:05:29

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SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
CROSSBRIDGE DRIVE
STRIPING AND SIGNAGE PLAN 1

DRAWING T1
66 OF 82 SHTS

CLV DRAWING NO. XXXXX

emarjerrison
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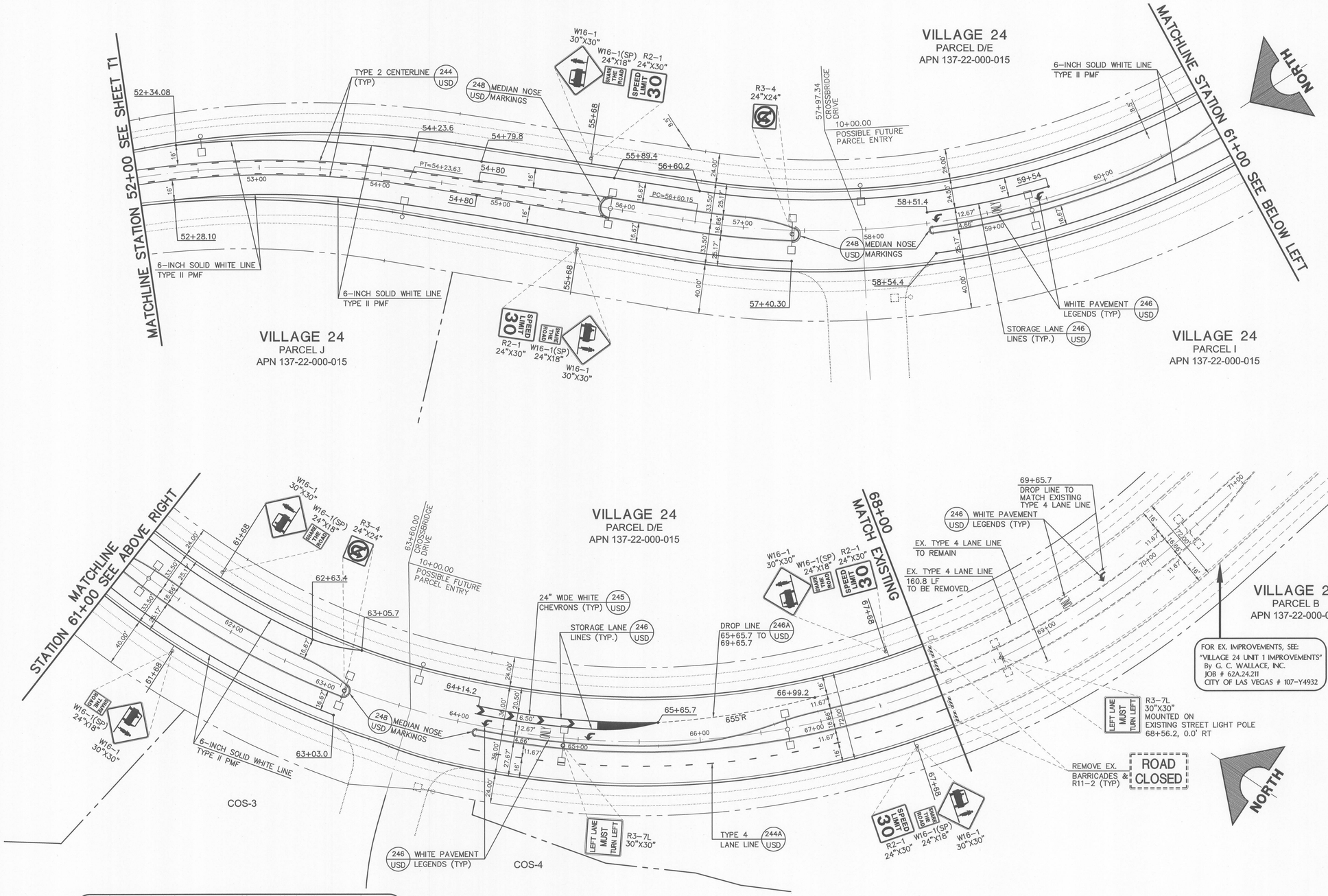

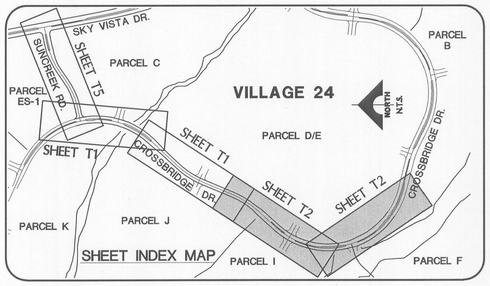

CROSSBRIDGE DRIVE

SCALE: 1"=40'

40 0 40 80

SCALE FEET

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SEE SHEET C3 FOR CITY OF LAS VEGAS TRAFFIC NOTES

ENGINEER - STATE OF NEVADA
VICKI D. MARJERRISON
No. 13079
PROFESSIONAL ENGINEER
CIVIL
Exp. 12/31/2015
DATE 5-14-14

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SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
CROSSBRIDGE DRIVE
STRIPING AND SIGNAGE PLAN 2

DRAWING T2
67 OF 82 SHTS

CLV DRAWING NO. XXXXX

emar jenson

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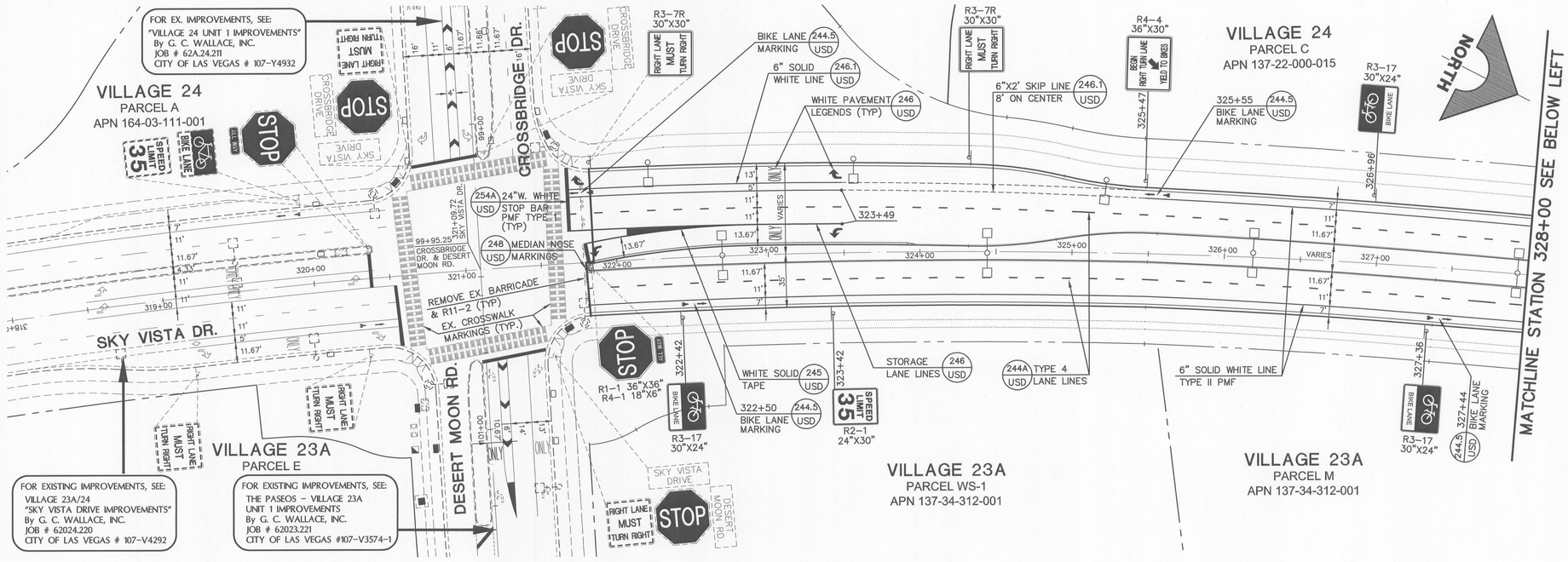

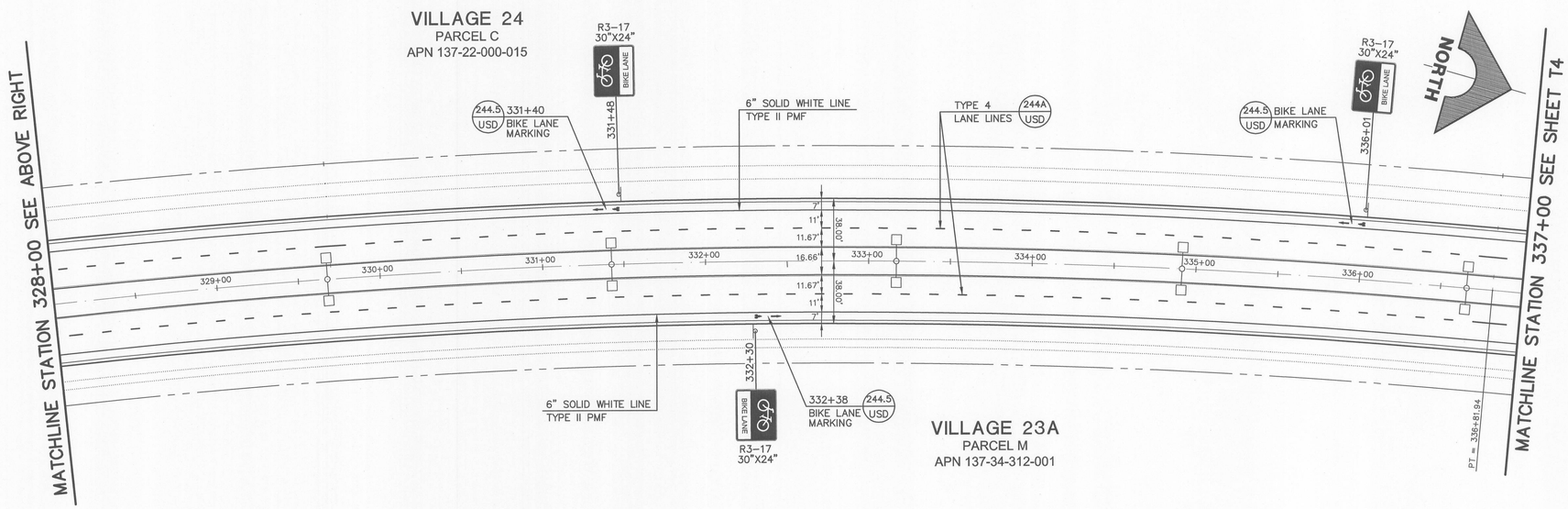

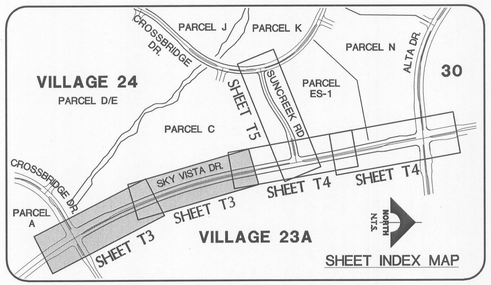

SHEET INDEX MAP

SKY VISTA DRIVE

SCALE: 1"=40'

40 0 40 80

SCALE FEET

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SEE SHEET C3 FOR CITY OF LAS VEGAS TRAFFIC NOTES

PROFESSIONAL ENGINEER - STATE OF NEVADA
VICKI D. MARJERRISON
Exp. 12/31/2015
CIVIL
No. 13079

DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

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VILLAGE 24 - UNIT 2 IMPROVEMENTS

SKY VISTA DRIVE
STRIPING AND SIGNAGE PLAN 1

DRAWING
T3
68 OF 82 SHTS

CLV DRAWING NO. XXXXX

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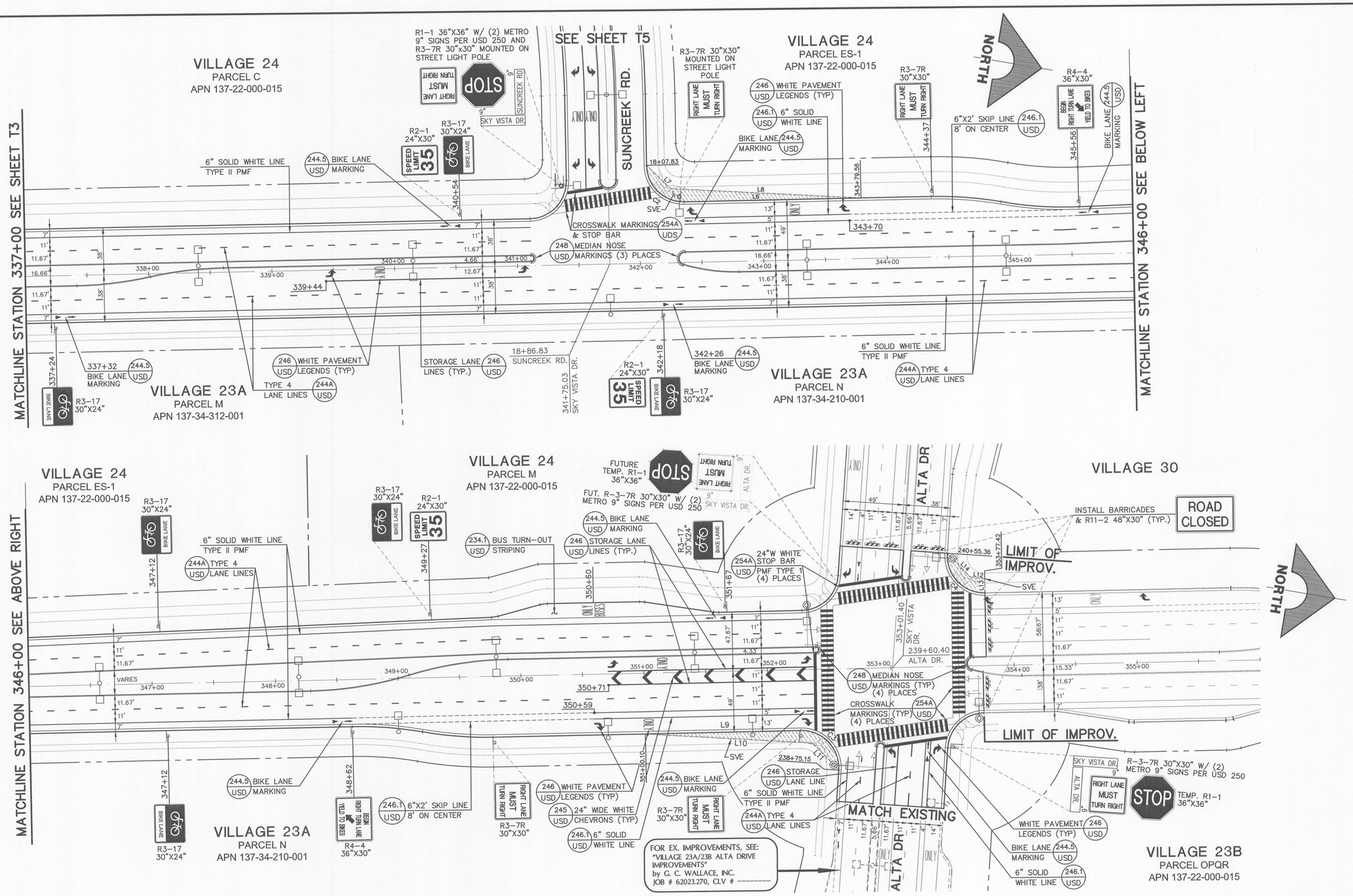

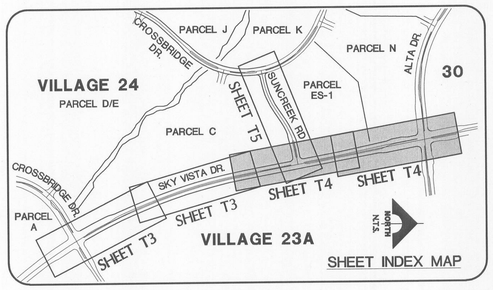

SHEET INDEX MAP

SKY VISTA DRIVE

SCALE: 1"=40'

40 0 40 80

SCALE FEET

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SEE SHEET C3 FOR CITY OF LAS VEGAS TRAFFIC NOTES

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

PROFESSIONAL ENGINEER - STATE OF NEVADA
VICKI D. MARJERRISON
Exp. 12/31/2015
CIVIL
No. 13079
DATE: 5-14-14

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PROJECT NO. 62A.24.212

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PLOT TIME: 14:06:04

G. C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
1555 S. RAINBOW BOULEVARD · LAS VEGAS, NV 89146
T: 702.804.2000 · F: 702.804.2299 · GCWALLACE.COM

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SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

SKY VISTA DRIVE
STRIPING AND SIGNAGE PLAN 2

DRAWING
T4
69 OF 82 SHTS

CLV DRAWING NO. XXXXX

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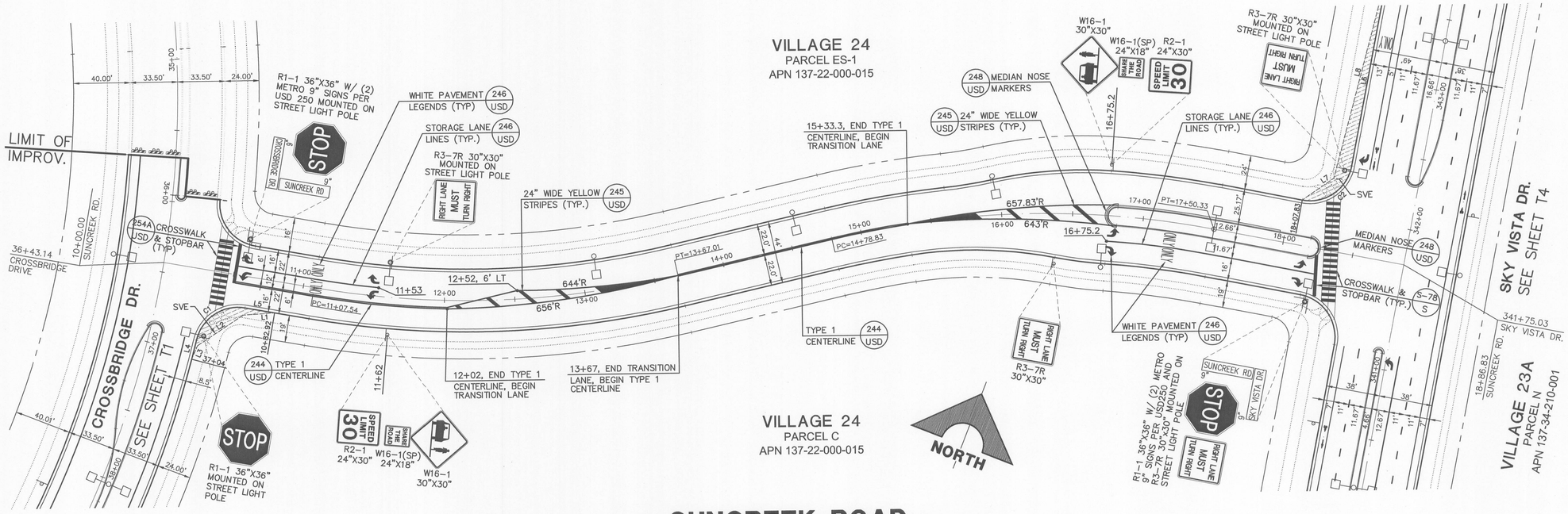
emarjerrison



SUNCREEK ROAD

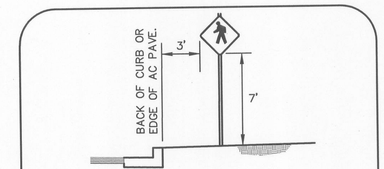
SCALE: 1"=40'

40 0 40 80

SCALE FEET

SIGHT VISIBILITY ZONE CURVE TABLE				
CURVE	DELTA	RADIUS	LENGTH	TANGENT
C1	86°05'41"	30.00	45.08	28.02
C2	90°00'00"	30.00	47.12	30.00
C3	95°00'00"	30.00	49.74	32.74
C4	95°00'00"	30.00	49.74	32.74

SIGHT VISIBILITY ZONE LINE TABLE		
LINE	LENGTH	BEARING
L1	22.11	N64°31'14"E
L2	38.67	N35°15'14"E
L3	10.32	N02°02'45"E
L4	13.77	S07°15'20"E
L5	21.19	S78°18'05"W
L6	143.03	N10°38'15"W
L7	27.09	S34°21'45"W
L8	154.26	S06°36'24"E
L9	126.13	N10°38'15"W
L10	136.05	S06°15'22"E
L11	30.14	S36°51'45"W
L12	12.11	S02°36'20"E
L13	11.39	S79°21'45"W
L14	26.49	S36°51'45"W



REFER TO 249A UDS FOR FURTHER INSTALLATION REQUIREMENTS

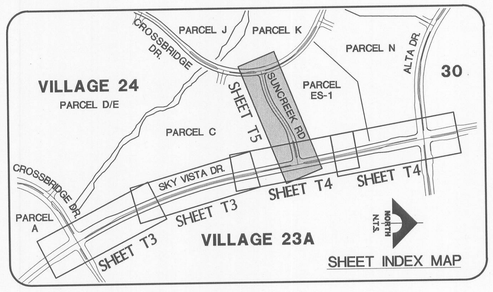
TYPICAL SIGN INSTALLATION

SCALE: N.T.S.

PRIOR TO INITIATING THE INSTALLATION OF ANY STRIPING REFER TO THE CITY OF LAS VEGAS TRAFFIC NOTES AND STRIPING GENERAL NOTES.

SEE THIS SHEET FOR TYPICAL SIGN INSTALLATION DETAIL, SIGHT VISIBILITY ZONE LINE & CURVE TABLES, AND STRIPING GENERAL NOTES.

SEE SHEET C3 FOR CITY OF LAS VEGAS TRAFFIC NOTES



SHEET INDEX MAP

Avoid cutting underground utility lines. It's costly.
Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE (USA)



1-702-227-2929

Avoid hitting underground traffic signal system and streetlight system conduits. It's costly.
Call before you UnderGround.
1-702-455-7511
CLARK COUNTY TRAFFIC OPERATIONS AND
1-702-229-6611
LAS VEGAS AREA COMPUTERIZED TRAFFIC SYSTEM

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM NO. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

GENERAL NOTES

1. SEE THIS SHEET FOR SIGN INSTALLATION DETAIL.
2. SIGNAGE SHALL BE INSTALLED PRIOR TO ANY PORTION OF THE ROADWAY BEING OPEN TO PUBLIC TRAFFIC.
3. ALL LANE DELINEATION'S TO BE MEASURED AT RIGHT ANGLES AND TO BACK OF CURB TO CONFORM TO CURB ANGLE POINT AND TRANSITIONS.
4. SEE SHEET C3 FOR CITY OF LAS VEGAS TRAFFIC NOTES.
5. ALL COLD POLYMER FILM STOP BARS, CROSSWALKS, PAVEMENT ARROWS, AND PAVEMENT MARKINGS SHALL BE 3M-N440 OR APPROVED EQUIVALENT.
6. ALL CONSTRUCTION AND MATERIALS FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH THE "UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" CLARK COUNTY AREA, NEVADA, THIRD EDITION, UNLESS OTHERWISE SPECIFIED BY NOTE ON THE DRAWINGS AND/OR SPECIFICATIONS.
7. ALL DIMENSIONS ARE TAKEN TO BACK OF CURB AND CENTER OF LANE LINES UNLESS OTHERWISE NOTED.
8. SIDEWALK RAMP TO BE INSTALLED BY OTHERS AT DEPRESSED CURB LOCATIONS SHOWN ON PLAN AND PROFILE DRAWINGS.
9. CONTRACTOR TO OBTAIN FINAL STREET NAMES PRIOR TO PROCEEDING WITH STREET NAME SIGNS.

STATE OF NEVADA — PROFESSIONAL ENGINEER — VICKI D. MARJERRISON — No. 13078 — CIVIL — Exp. 12/31/2015 — DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

DESCRIPTION	REV	DATE

PROJECT NO. 62A.24.212

DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 14:06:13

G.C. WALLACE COMPANIES
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SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

SUNCREEK ROAD
STRIPING AND SIGNAGE PLAN

DRAWING T5
70 OF 82 SHTS

CLV DRAWING NO. XXXXX

emarjerrison

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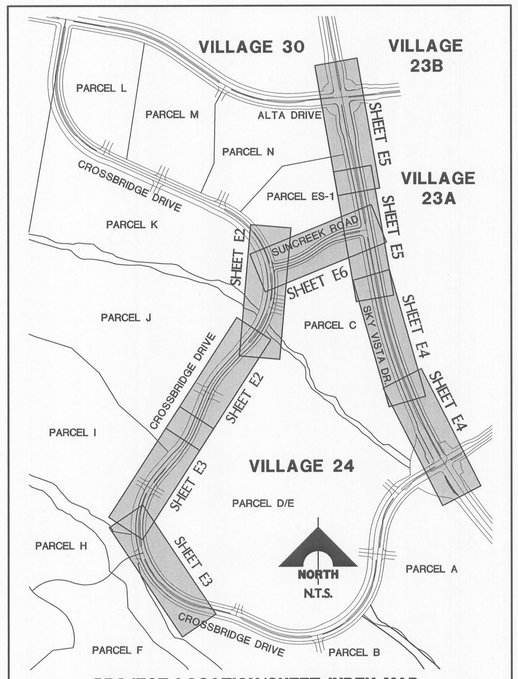

PROJECT LOCATION/SHEET INDEX MAP

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

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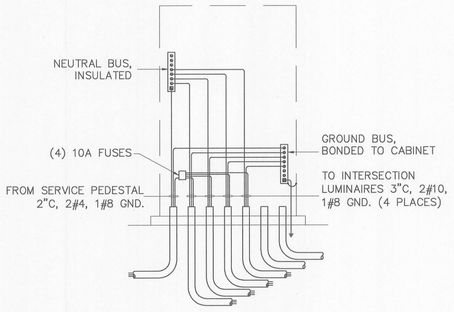
NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

LOCATION

LYING WITHIN SECTIONS 34 TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA.

SUMMERLIN STREET CLASSIFICATION

CROSSBRIDGE DRIVE:	NEIGHBORHOOD COLLECTOR LEVEL 1 AND LEVEL 2 WITH SHARED BIKE LANES
SKY VISTA DRIVE:	NEIGHBORHOOD ARTERIAL WITH BIKE LANES
SUNCREEK ROAD:	NEIGHBORHOOD COLLECTOR LEVEL 1 WITH SHARED BIKE LANES
ALTA DRIVE:	NEIGHBORHOOD ARTERIAL WITH BIKE LANES



NOTES:

1. INSTALL (4) 1 POLE FUSE HOLDERS, FUSES AND WIRING INTO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.
2. ALL BUSSING SHALL BE COPPER.
3. ALL CONDUCTORS SHALL BE STRANDED 600V THW INSULATED COPPER.

TRAFFIC SIGNAL CONTROLLER CABINET — 1

NOT TO SCALE

ELECTRICAL SERVICE NOTES

SP4: EXISTING 200 AMP SERVICE PEDESTAL. REFER TO SUMMERLIN VILLAGE 24 UNIT 1 IMPROVEMENTS FOR ADDITIONAL INFORMATION INCLUDING EXISTING CONNECTED LOADS.

SP5: EXISTING 200 AMP SERVICE PEDESTAL. REFER TO SUMMERLIN VILLAGE 23A UNIT 1 IMPROVEMENTS AND SUMMERLIN VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS FOR ADDITIONAL INFORMATION INCLUDING EXISTING CONNECTED LOADS.

SP1 AND SP3: 200 AMP, SINGLE PHASE, 3 WIRE, 120/240V PAD MOUNTED SERVICE PEDESTALS. FEEDERS FROM N.P.CO. POINTS OF CONNECTION TO BE 2"C, 2#3/0 THW, 1#3/0 WHITE THW (COPPER). TRANSFORMER TO SERVICE PEDESTAL DISTANCES GREATER THAN 195 FEET FOR SPECIFIED CONDUCTORS MUST BE APPROVED BY ENGINEER. SERVICE PEDESTALS SHALL BE LOCATED A MINIMUM OF 30 FEET FROM THE TRANSFORMERS.

THE FOLLOWING SHALL BE INCLUDED IN EACH SERVICE PEDESTAL:

(2) 60 AMP, 240V, 2-POLE CIRCUIT BREAKERS,
(2) 60 AMP, 240V, 2-POLE LIGHTING CONTACTORS,
(2) TEST SWITCHES (ONE FOR EACH CONTACTOR),

PHOTOELECTRIC CONTROL,
(1) 15 AMP, 120V, SINGLE POLE CIRCUIT BREAKER FOR LIGHTING CONTROLS.

CONTRACTOR TO PROVIDE (2) 2" CONDUITS FROM EACH SERVICE PEDESTAL TO FIRST STREET LIGHTING PULLBOX. SERVICE PEDESTALS SHALL COMPLY WITH CLARK COUNTY AREA UNIFORM STANDARD DRAWINGS 330, 331, 332.1 AND 335.1.

GENERAL ELECTRICAL NOTES

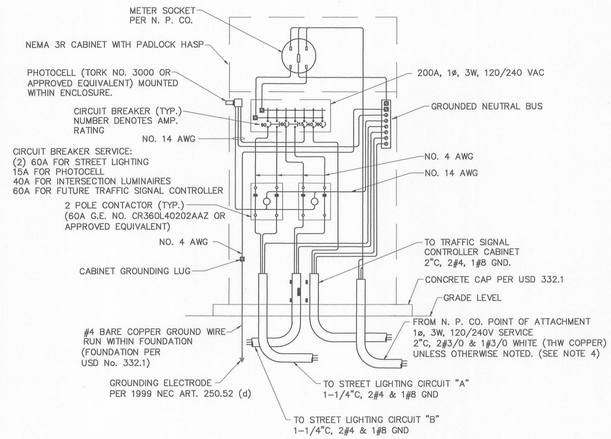
1. ALL UNDERGROUND CONDUIT SHALL BE TYPE RNC (RIGID NONMETALLIC CONDUIT), SCHEDULE 40 PVC AND SHALL BE INSTALLED PER USD 404.1419. ABOVE GRADE CONDUIT SHALL BE TYPE RMC (RIGID METALLIC CONDUIT). ALL CONDUIT WHICH WOULD OTHERWISE BE EMPTY SHALL INCLUDE A NYLON PULL STRING AND 1#8 CONDUCTOR FOR LOCATING PURPOSES.

2. ALL CONDUCTORS SHALL BE STRANDED, 600-VOLT, TYPE THW INSULATED COPPER.

3. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ELECTRICAL COMPONENTS AND HARDWARE AS REQUIRED BY THE NATIONAL ELECTRICAL CODE, LATEST EDITION AND SHALL COMPLY WITH THE REQUIREMENTS OF THE INSPECTING AUTHORITY HAVING JURISDICTION.

ELECTRICAL CONSTRUCTION NOTES

1E EXISTING N.P.CO. TRANSFORMER
2E PROPOSED N.P.CO. TRANSFORMER
3E EXISTING SP4. REFER TO ELECTRICAL SERVICE NOTES
4E EXISTING SP5. REFER TO ELECTRICAL SERVICE NOTES
5E PROPOSED SP1. REFER TO ELECTRICAL SERVICE NOTES & DETAIL 2 SHEET E1
6E PROPOSED SP3. REFER TO ELECTRICAL SERVICE NOTES & DETAIL 2 SHEET E1
7E PROPOSED TRAFFIC SIGNAL CONTROLLER CABINET REFER TO DETAIL 1 SHEET E1
8E EXISTING TRAFFIC SIGNAL CONTROLLER CABINET
9E CONNECT TO EXISTING CONDUIT STUB
10E STUB OUT AND CAP
11E PROPOSED TYPE 2B SINGLE LUMINAIRE PER SSD E-1
11AE PROPOSED TYPE 2C SINGLE LUMINAIRE PER SSD E-1
12E PROPOSED TYPE 2B TWIN LUMINAIRE PER SSD E-1
13E PROPOSED TYPE 2A MOD 1 LUMINAIRE WITH PROVISION FOR FUTURE TRAFFIC SIGNAL MAST ARM PER SSD E-1
14E EXISTING STREET LIGHT
15E EXISTING NO. 3-1/2 PULLBOX
16E EXISTING NO. 5 PULLBOX
17E EXISTING NO. 7 PULLBOX
18E EXISTING TYPE 200 PULLBOX
19E PROPOSED NO. 3-1/2 PULLBOX PER USD 326
20E PROPOSED NO. 5 PULLBOX PER USD 326
21E PROPOSED NO. 7 PULLBOX PER USD 326
22E PROPOSED P30 PULLBOX PER USD 404.132
23E PROPOSED TYPE 200 PULLBOX PER USD 404.133
24E FUTURE TYPE 2B SINGLE LUMINAIRE PER SSD E-1
25E FUTURE CONDUIT
26E PROPOSED 1-1/4" CONDUIT CONTAINING 2#4, 1#8 GND [STREET LIGHTING]
27E PROPOSED 1-1/4" CONDUIT ONLY [STREET LIGHTING]
28E PROPOSED (5) 3" CONDUITS [INTERSECTION LUMINAIRES AND TRAFFIC SIGNAL] AND 4" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL INTERCONNECT] INSTALL 2#10, 1#10 GND IN EACH OF (4) 3" CONDUITS
29E PROPOSED 2" CONDUIT CONTAINING 2#4, 1#8 GND [STREET LIGHTING]
29AE PROPOSED (2) 2" CONDUIT CONTAINING 2#4, 1#8 GND [STREET LIGHTING]
30E PROPOSED 2" CONDUIT CONTAINING 2#10, 1#8 GND [INTERSECTION LUMINAIRES] AND 2" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL]
31E PROPOSED 2" CONDUIT ONLY [FUTURE SCHOOL FLASHER]
42E PROPOSED 3" CONDUIT CONTAINING 2#10, 1#8 GND [INTERSECTION LUMINAIRES]
42AE PROPOSED (2) 3" CONDUIT CONTAINING 2#10, 1#8 GND [INTERSECTION LUMINAIRES]
43E PROPOSED 3" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL]
43AE PROPOSED (2) 3" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL]
44E PROPOSED 4" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL INTERCONNECT W/2' RADIUS BENDS]
35E EXISTING 1-1/4" CONDUIT CONTAINING 2#4, 1#8 GND [STREET LIGHTING]
45AE EXISTING (2) 1-1/4" CONDUIT CONTAINING 2#4, 1#8 GND [STREET LIGHTING]
36E EXISTING 1-1/4" CONDUIT ONLY [STREET LIGHTING]
37E EXISTING 2" CONDUIT ONLY [FUTURE SCHOOL FLASHER]
38E EXISTING 2" CONDUIT ONLY [POWER TO TRAFFIC SIGNAL CONTROLLER] INSTALL 2#4, 1#8 GND IN EXISTING CONDUIT [SP5]
39E EXISTING (4) 3" CONDUITS CONTAINING 2#10, 1#10 GND EACH [STREET LIGHTING] EXISTING (1) 3" EXISTING CONDUIT ONLY [FUTURE TRAFFIC SIGNAL] EXISTING (1) 4" CONDUIT ONLY [FUTURE TRAFFIC INTERCONNECT]
40E EXISTING 4" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL INTERCONNECT]
41E EXISTING TYPE 2A MOD 1 LUMINAIRE WITH PROVISION FOR FUTURE TRAFFIC SIGNAL MAST ARM PER SSD E-1
42E EXISTING 3" CONDUIT CONTAINING 2#10, 1#8 GND [INTERSECTION LUMINAIRES]
43E EXISTING 3" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL]
44E EXISTING 2" CONDUIT CONTAINING 2#10, 1#8 GND [INTERSECTION LUMINAIRES] AND 2" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL]
45E EXISTING 2" CONDUIT CONTAINING 2#4, 1#8 GND [STREET LIGHTING]
46E PROPOSED (2) 1-1/4" CONDUIT CONTAINING 2#4, 1#8 GND [STREET LIGHTING]
47E EXISTING 1-1/4" CONDUIT ONLY ADD 2#4, 1#8 GND [STREET LIGHTING]
47AE EXISTING 1-1/4" CONDUIT ONLY [STREET LIGHTING] ADD (2) 2#4, (2) 1#8 GND
47BE EXISTING 1-1/4" CONDUIT CONTAINING 2#4, 1#8 GND [STREET LIGHTING] ADD 2#4, 1#8 GND
48E CONNECT NEW 2#4, 1#8 GND TO EXISTING 2#4, 1#8 GND (CIRCUIT 5B) [STREET LIGHTING]



NOTES:

1. MANUFACTURER'S CATALOG NUMBERS ARE SHOWN TO ESTABLISH A DEGREE OF QUALITY AND PERFORMANCE, APPROVED AS EQUIVALENT ARE ACCEPTABLE.
2. ALL CONDUCTORS AND BUSSING TO BE COPPER.
3. INSTALL PER CLARK COUNTY AREA, UNIFORM STANDARD DRAWING NUMBER 330, 331, 332.1, 335.1.
4. TRANSFORMER TO SERVICE PEDESTAL DISTANCES GREATER THAN 195' FOR SPECIFIED CONDUCTORS MUST BE APPROVED BY ENGINEER.
5. ALL CONDUCTOR SHALL BE STRANDED 600V THW INSULATED COPPER.

(CLV) 200A PAD MOUNTED SERVICE POINT FOR TRAFFIC SIGNAL AND STREET LIGHTING — 2

NOT TO SCALE

LEGEND:

STREET LIGHTING CONDUIT: PROPOSED / EXISTING / FUTURE
TRAFFIC SIGNAL CONDUIT: PROPOSED / EXISTING / FUTURE
INTERCONNECT CONDUIT: PROPOSED / EXISTING / FUTURE
SCHOOL FLASHER CONDUIT: PROPOSED / EXISTING / FUTURE
(N) SERVICE PEDESTAL DESIGNATION
(NX) CIRCUIT DESIGNATION — N = SERVICE PEDESTAL, X = CIRCUIT

STREET LIGHT: PROPOSED / EXISTING / FUTURE
STREET LIGHT WITH TRAFFIC SIGNAL: PROPOSED / EXISTING / FUTURE
#3-1/2 PULLBOX, MARKED "STREET LIGHTING", UNLESS OTHERWISE NOTED: PROPOSED / EXISTING / FUTURE
#5 PULLBOX, MARKED "TRAFFIC SIGNAL", UNLESS OTHERWISE NOTED: PROPOSED / EXISTING / FUTURE
#7 PULLBOX, MARKED "TRAFFIC SIGNAL", UNLESS OTHERWISE NOTED: PROPOSED / EXISTING / FUTURE
SERVICE PEDESTAL: PROPOSED / EXISTING / FUTURE
N.P.CO. TRANSFORMER: PROPOSED / EXISTING / FUTURE
TRAFFIC SIGNAL CONTROLLER: PROPOSED / EXISTING / FUTURE

SERVICE PEDESTAL CIRCUIT CAPACITY VERIFICATION

CIRCUIT NAME:	SP1 (A)		SP1 (C)		SP3 (A)		SP3 (B)		SP4 (A)		SP4 (B)		SP5 (B)	
CIRCUIT TYPE:	STREET LIGHTING (PROPOSED)		INTERSECTION STREET LIGHTING (PROPOSED)		STREET LIGHTING (PROPOSED)		STREET LIGHTING (PROPOSED)		STREET LIGHTING (EXISTING)		STREET LIGHTING (EXISTING)		STREET LIGHTING (EXISTING)	
VOLTAGE:	240		240		240		240		240		240		240	
CIRCUIT CAPACITY:	60		60		60		60		60		60		60	
MAXIMUM CONTINUOUS CURRENT DRAW IS 80% OF CIRCUIT CAPACITY:	48		48		48		48		48		48		48	
EXISTING CIRCUIT LOAD AMPS =	0.00		0.00		0.00		0.00		0.00		9.00		1.00	
	PROPOSED		PROPOSED		PROPOSED		PROPOSED		PROPOSED		PROPOSED		PROPOSED	
PROPOSED LOAD TO CIRCUIT:	QTY.	AMPS	QTY.	AMPS	QTY.	AMPS	QTY.	AMPS	QTY.	AMPS	QTY.	AMPS	QTY.	AMPS
100 WATT SINGLE LUMINAIRES AT 240V = 0.50 AMPS	0	0.00	0	0	0	0.00	0	0.00	0	0.00	0	0	3	1.50
150 WATT SINGLE LUMINAIRES AT 240V = 0.75 AMPS	6	4.50	0	0.00	6	4.50	11	8.25	1	0.75	1	0.75	0	0.00
150 WATT TWIN LUMINAIRES AT 240V = 1.50 AMPS	7	10.50	0	0.00	1	1.50	1	1.50	5	7.50	2	3.00	10	15.00
400 WATT SINGLE LUMINAIRES AT 120V = 4.00 AMPS	0	0.00	4	16.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
TOTAL PROPOSED LOAD AMPS =	15.00		16.00		6.00		9.75		8.25		3.75		16.50	
EXISTING PLUS PROPOSED LOAD AMPS =	15.00		16.00		6.00		9.75		8.25		12.75		17.50	
REMAINING AVAILABLE LOAD AMPS: MAXIMUM - EXISTING - PROPOSED =	33.00		32.00		42.00		38.25		39.75		35.25		30.50	
	FUTURE		FUTURE		FUTURE		FUTURE		FUTURE		FUTURE		FUTURE	
FUTURE LOAD TO CIRCUIT:	QTY.	AMPS	QTY.	AMPS	QTY.	AMPS	QTY.	AMPS	QTY.	AMPS	QTY.	AMPS	QTY.	AMPS
100 WATT SINGLE LUMINAIRES AT 240V = 0.50 AMPS	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
150 WATT SINGLE LUMINAIRES AT 240V = 0.75 AMPS	0	0.00	0	0.00	0	0.00	3	2.25	0	0.00	1	0.75	0	0.00
150 WATT TWIN LUMINAIRES AT 240V = 1.50 AMPS	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
TOTAL FUTURE LOAD AMPS =	0.00		0.00		0.00		2.25		0.00		0.75		0.00	
EXISTING PLUS PROPOSED PLUS FUTURE LOAD AMPS =	15.00		16.00		6.00		12.0		8.25		13.50		17.50	
FUTURE REMAINING AVAILABLE LOAD AMPS: MAX. - EX. - PR. - FUT. =	33.00		32.00		42.00		36.00		39.75		34.50		30.50	







PROFESSIONAL ENGINEER - STATE OF NEVADA
JOHN T. BROWN
Exp. 12/31/2008
No. 16033
ELECTRICAL
DATE: _____
FOR ELECTRICAL COMPONENTS ONLY

ENGINEER - STATE OF NEVADA
VICKI D. MARJERRISON
Exp. 12/31/2015
No. 13019
CIVIL
DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	AGEN APP	DATE	GCW APP	DATE

PROJECT NO. 62A.24212
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LAS VEGAS · SACRAMENTO · RENO

SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
STREET LIGHT, MASTER CONDUIT AND ELECTRICAL PLAN 1

DRAWING E1
71 OF 82 SHTS

CLV DRAWING NO. XXXXX

emorjerrison

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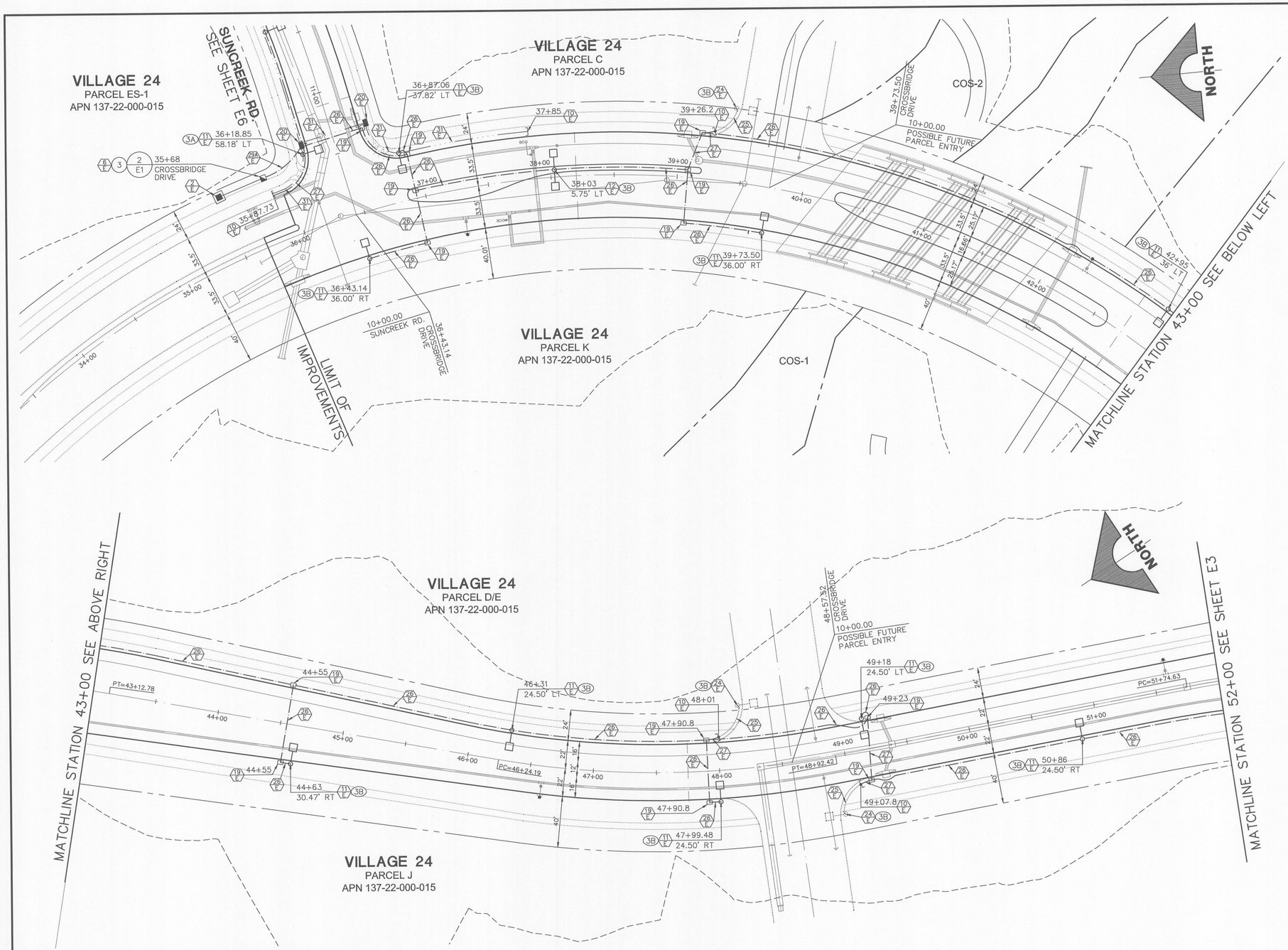
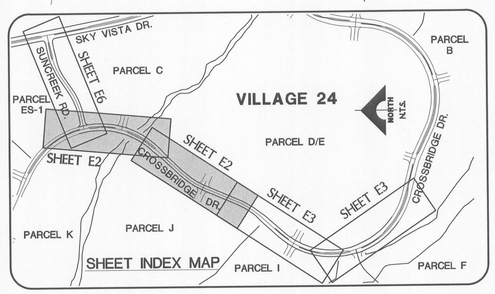


CROSSBRIDGE DRIVE

SCALE: 1"=40'

40 0 40 80

SCALE FEET



ELECTRICAL CONSTRUCTION NOTES

1E EXISTING N.P.CO. TRANSFORMER
2E PROPOSED N.P.CO. TRANSFORMER
3E EXISTING SP4. REFER TO ELECTRICAL SERVICE NOTES
4E EXISTING SP5. REFER TO ELECTRICAL SERVICE NOTES
5E PROPOSED SP1. REFER TO ELECTRICAL SERVICE NOTES & DETAIL 2 SHEET E1
6E PROPOSED SP3. REFER TO ELECTRICAL SERVICE NOTES & DETAIL 2 SHEET E1
7E PROPOSED TRAFFIC SIGNAL CONTROLLER CABINET REFER TO DETAIL 1 SHEET E1
8E EXISTING TRAFFIC SIGNAL CONTROLLER CABINET
9E CONNECT TO EXISTING CONDUIT STUB
10E STUB OUT AND CAP
11E PROPOSED TYPE 2B SINGLE LUMINAIRE PER SSD E-1
11AE PROPOSED TYPE 2C SINGLE LUMINAIRE PER SSD E-1
12E PROPOSED TYPE 2B TWIN LUMINAIRE PER SSD E-1
13E PROPOSED TYPE 2A MOD 1 LUMINAIRE WITH PROVISION FOR FUTURE TRAFFIC SIGNAL MAST ARM PER SSD E-1
14E EXISTING STREET LIGHT
15E EXISTING NO. 3-1/2 PULLBOX
16E EXISTING NO. 5 PULLBOX
17E EXISTING NO. 7 PULLBOX
18E EXISTING TYPE 200 PULLBOX
19E PROPOSED NO. 3-1/2 PULLBOX PER USD 326
20E PROPOSED NO. 5 PULLBOX PER USD 326
21E PROPOSED NO. 7 PULLBOX PER USD 326
22E PROPOSED P30 PULLBOX PER USD 404.132
23E PROPOSED TYPE 200 PULLBOX PER USD 404.133
24E FUTURE TYPE 2B SINGLE LUMINAIRE PER SSD E-1
25E FUTURE CONDUIT
26E PROPOSED 1-1/4" CONDUIT CONTAINING 2#4, 1#8 GND [STREET LIGHTING]
27E PROPOSED 1-1/4" CONDUIT ONLY [STREET LIGHTING]
28E PROPOSED (5) 3" CONDUITS [INTERSECTION LUMINAIRES AND TRAFFIC SIGNAL] AND 4" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL INTERCONNECT] INSTALL 2#10, 1#10 GND IN EACH OF (4) 3" CONDUITS
29E PROPOSED 2" CONDUIT CONTAINING 2#4, 1#8 GND [STREET LIGHTING]
29AE PROPOSED (2) 2" CONDUIT CONTAINING 2#4, 1#8 GND [STREET LIGHTING]
30E PROPOSED 2" CONDUIT CONTAINING 2#10, 1#8 GND [INTERSECTION LUMINAIRES] AND 2" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL]
31E PROPOSED 2" CONDUIT ONLY [FUTURE SCHOOL FLASHER]
32E PROPOSED 3" CONDUIT CONTAINING 2#10, 1#8 GND [INTERSECTION LUMINAIRES]
32AE PROPOSED (2) 3" CONDUIT CONTAINING 2#10, 1#8 GND [INTERSECTION LUMINAIRES]
33E PROPOSED 3" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL]
33AE PROPOSED (2) 3" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL]
34AE PROPOSED 4" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL INTERCONNECT W/2' RADIUS BENDS]
35E EXISTING 1-1/4" CONDUIT CONTAINING 2#4, 1#8 GND [STREET LIGHTING]
35AE EXISTING (2) 1-1/4" CONDUIT CONTAINING 2#4, 1#8 GND [STREET LIGHTING]
36E EXISTING 1-1/4" CONDUIT ONLY [STREET LIGHTING]
37E EXISTING 2" CONDUIT ONLY [FUTURE SCHOOL FLASHER]
38E EXISTING 2" CONDUIT ONLY [POWER TO TRAFFIC SIGNAL CONTROLLER] INSTALL 2#4, 1#8 GND IN EXISTING CONDUIT [SP5]
39E EXISTING (4) 3" CONDUITS CONTAINING 2#10, 1#10 GND EACH [STREET LIGHTING] EXISTING (1) 3" EXISTING CONDUIT ONLY [FUTURE TRAFFIC SIGNAL] EXISTING (1) 4" CONDUIT ONLY [FUTURE TRAFFIC INTERCONNECT]
40E EXISTING 4" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL INTERCONNECT]
41E EXISTING TYPE 2A MOD 1 LUMINAIRE WITH PROVISION FOR FUTURE TRAFFIC SIGNAL MAST ARM PER SSD E-1
42E EXISTING 3" CONDUIT CONTAINING 2#10, 1#8 GND [INTERSECTION LUMINAIRES]
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44E EXISTING 2" CONDUIT CONTAINING 2#10, 1#8 GND [INTERSECTION LUMINAIRES] AND 2" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL]
45E EXISTING 2" CONDUIT CONTAINING 2#4, 1#8 GND [STREET LIGHTING]
46E PROPOSED (2) 1-1/4" CONDUIT CONTAINING 2#4, 1#8 GND [STREET LIGHTING]
47E EXISTING 1-1/4" CONDUIT ONLY ADD 2#4, 1#8 GND [STREET LIGHTING]
47AE EXISTING 1-1/4" CONDUIT ONLY [STREET LIGHTING] ADD (2) 2#4, (2) 1#8 GND
47BE EXISTING 1-1/4" CONDUIT CONTAINING 2#4, 1#8 GND [STREET LIGHTING] ADD 2#4, 1#8 GND
48E CONNECT NEW 2#4, 1#8 GND TO EXISTING 2#4, 1#8 GND (CIRCUIT 5B) [STREET LIGHTING]

Call before you UnderGround 1-702-455-7511 1-702-229-6611
Avoid cutting underground utility lines. It's costly. Call before you Dig. 1-800-227-2600 UNDERGROUND SERVICE (USA)
AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY. CALL BEFORE YOU DO OVERHEAD 1-702-227-2929

PROFESSIONAL ENGINEER STATE OF NEVADA JOHN T. BROWN Exp. 12/31/2008 ELECTRICAL No. 16053

DATE: _____
FOR ELECTRICAL COMPONENTS ONLY

CLV DRAWING NO. XXXXX

ENGINEER - STATE OF NEVADA VICKI D. MAR JERRISON Exp. 12/31/2015 CIVIL No. 13019 PROFESSIONAL
DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	AGEN. APP	DATE	GOV. APP

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 14:06:32

G.C. WALLACE COMPANIES
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VILLAGE 24 - UNIT 2 IMPROVEMENTS

STREET LIGHT, MASTER CONDUIT AND ELECTRICAL PLAN 2 - CROSSBRIDGE DRIVE

emorrison

DRAWING E2
72 OF 82 SHTS

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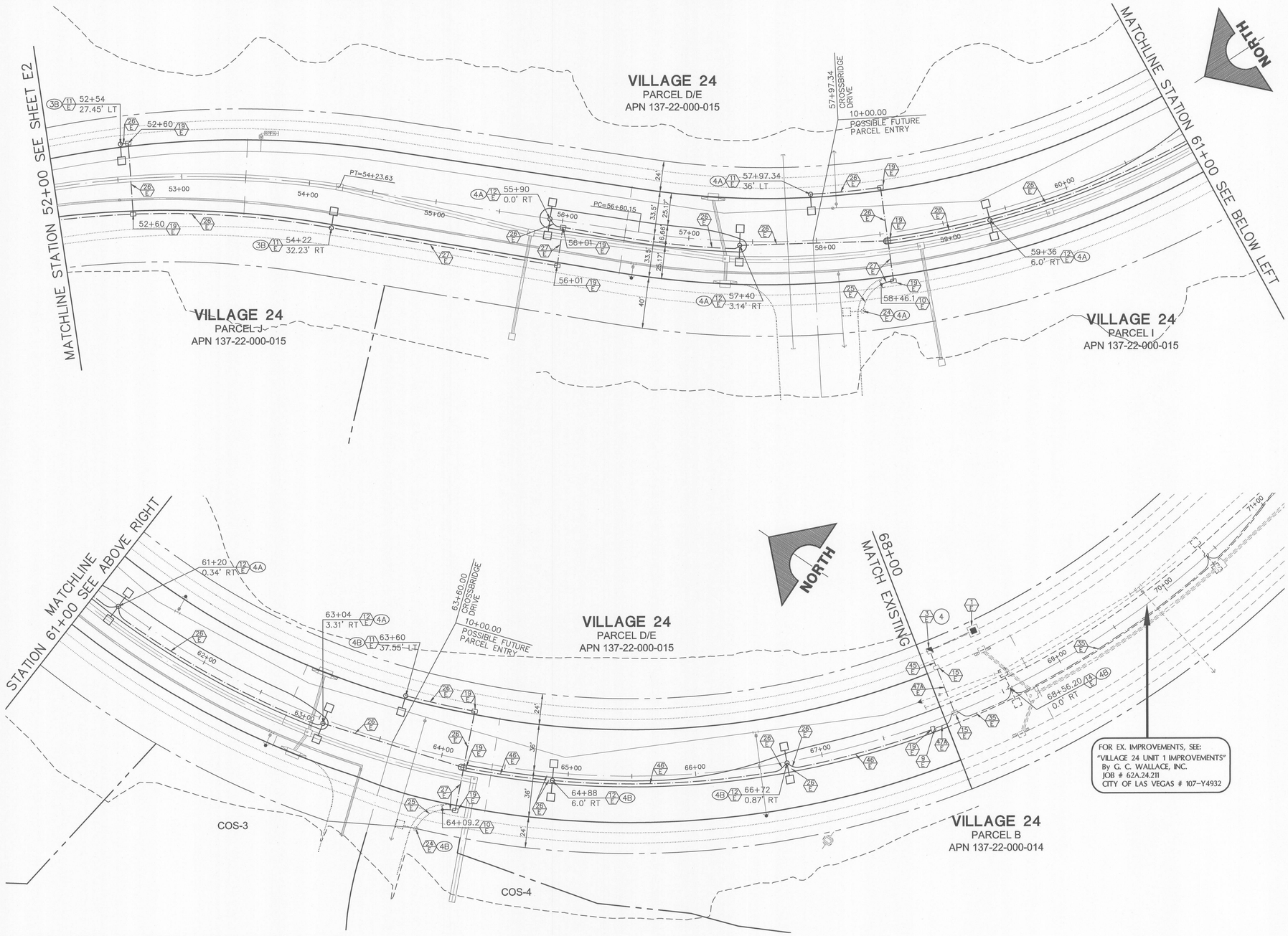
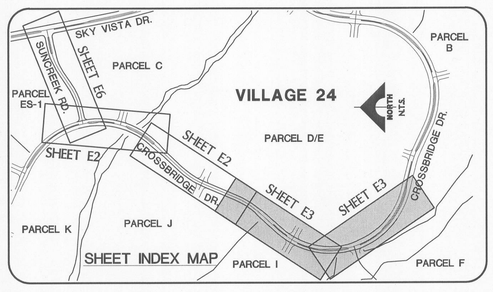


CROSSBRIDGE DRIVE

SCALE: 1"=40'

40 0 40 80

SCALE FEET



ELECTRICAL CONSTRUCTION NOTES

1E EXISTING N.P.CO. TRANSFORMER
2E PROPOSED N.P.CO. TRANSFORMER
3E EXISTING SP4. REFER TO ELECTRICAL SERVICE NOTES
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40E EXISTING 4" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL INTERCONNECT]
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47E EXISTING 1-1/4" CONDUIT ONLY ADD 2#4, 1#8 GND [STREET LIGHTING]
47AE EXISTING 1-1/4" CONDUIT ONLY [STREET LIGHTING] ADD (2) 2#4, (2) 1#8 GND
47BE EXISTING 1-1/4" CONDUIT CONTAINING 2#4, 1#8 GND [STREET LIGHTING] ADD 2#4, 1#8 GND
48E CONNECT NEW 2#4, 1#8 GND TO EXISTING 2#4, 1#8 GND (CIRCUIT 5B) [STREET LIGHTING]

Call before you UnderGround 1-702-455-7511 1-702-229-6611

Avoid cutting underground utility lines. It's costly. Call before you Dig. 1-800-227-2600 UNDERGROUND SERVICE (USA)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY. CALL BEFORE YOU DO OVERHEAD 1-702-227-2929

PROFESSIONAL ENGINEER - STATE OF NEVADA JOHN T. BROWN Exp. 12/31/2008 ELECTRICAL No. 16035

DATE: _____
FOR ELECTRICAL COMPONENTS ONLY

PROFESSIONAL ENGINEER - STATE OF NEVADA VICKI D. MARJERRISON NO. 13079 CIVIL

DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 14:06:44

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VILLAGE 24 - UNIT 2 IMPROVEMENTS

STREET LIGHT, MASTER CONDUIT AND ELECTRICAL PLAN 3 - CROSSBRIDGE DRIVE

DRAWING E3
73 OF 82 SHTS

CLV DRAWING NO. XXXXX

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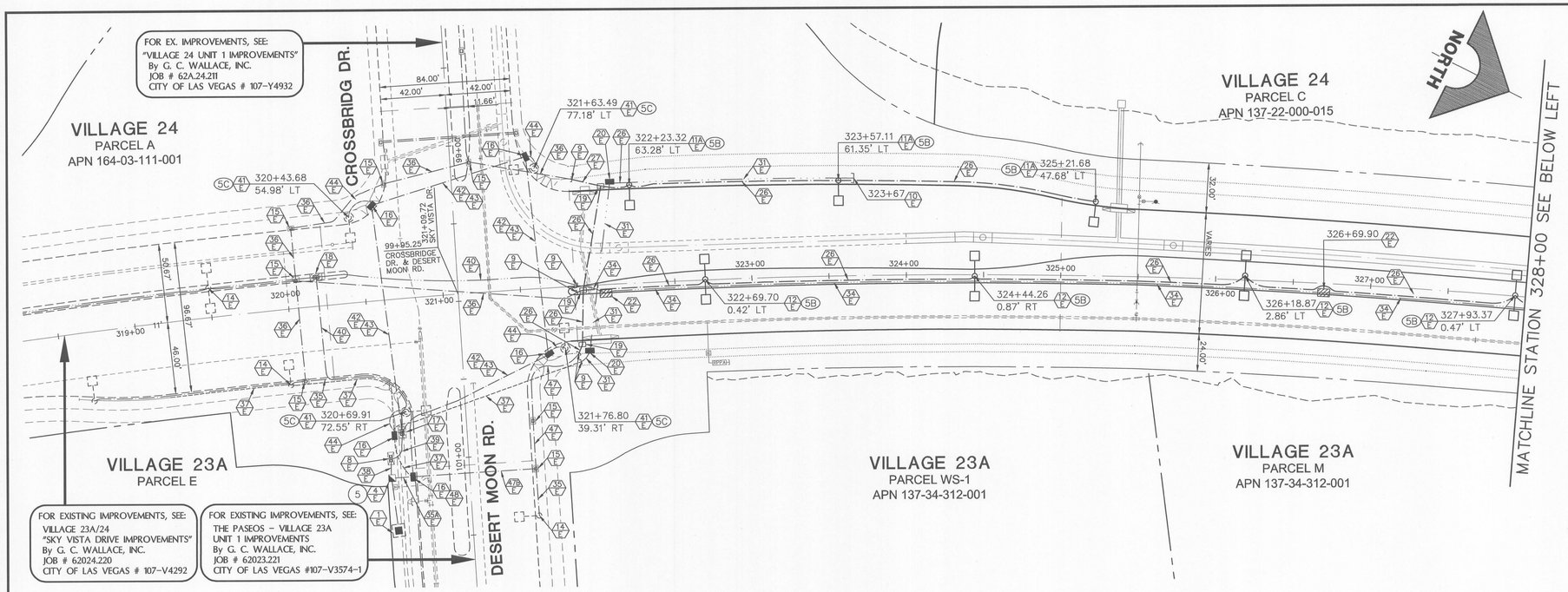

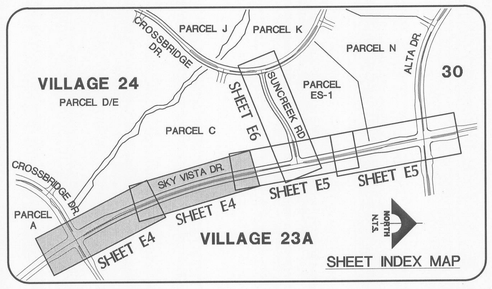

SKY VISTA DRIVE

SCALE: 1"=40'

40 0 40 80

SCALE FEET

Call before you UnderGround
1-702-455-7511
1-702-228-6611

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1-702-227-2929

PROFESSIONAL ENGINEER - STATE OF NEVADA
JOHN T. BROWN
Exp. 12/31/2008
ELECTRICAL
No. 16035

DATE: _____
FOR ELECTRICAL COMPONENTS ONLY

ELECTRICAL CONSTRUCTION NOTES

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2E PROPOSED N.P.CO. TRANSFORMER
3E EXISTING SP4. REFER TO ELECTRICAL SERVICE NOTES
4E EXISTING SP5. REFER TO ELECTRICAL SERVICE NOTES
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47AE EXISTING 1-1/4" CONDUIT ONLY [STREET LIGHTING] ADD (2) 2#4, (2) 1#8 GND
47BE EXISTING 1-1/4" CONDUIT CONTAINING 2#4, 1#8 GND [STREET LIGHTING] ADD 2#4, 1#8 GND
48E CONNECT NEW 2#4, 1#8 GND TO EXISTING 2#4, 1#8 GND (CIRCUIT 5B) [STREET LIGHTING]

PROFESSIONAL ENGINEER - STATE OF NEVADA
VICKI D. MARJERISON
Exp. 12/31/2015
CIVIL
No. 13079
PROFESSIONAL
DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

PROJECT NO. 62A.24.212
DESIGN:
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PLOT TIME: 14:06:56

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LAS VEGAS - SACRAMENTO - RENO

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VILLAGE 24 - UNIT 2 IMPROVEMENTS

STREET LIGHT, MASTER CONDUIT AND ELECTRICAL PLAN 4 - SKY VISTA DRIVE

emar jenson

DRAWING
E4
74 OF 82 SHTS

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CLV DRAWING NO. XXXXX

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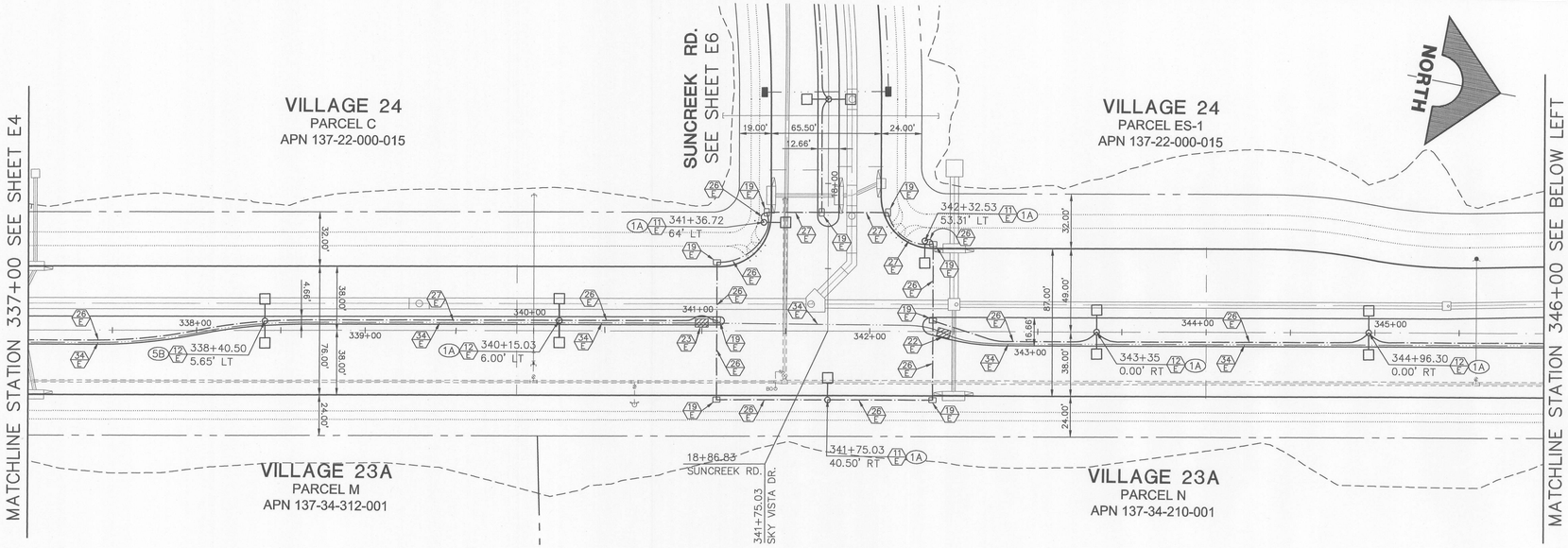
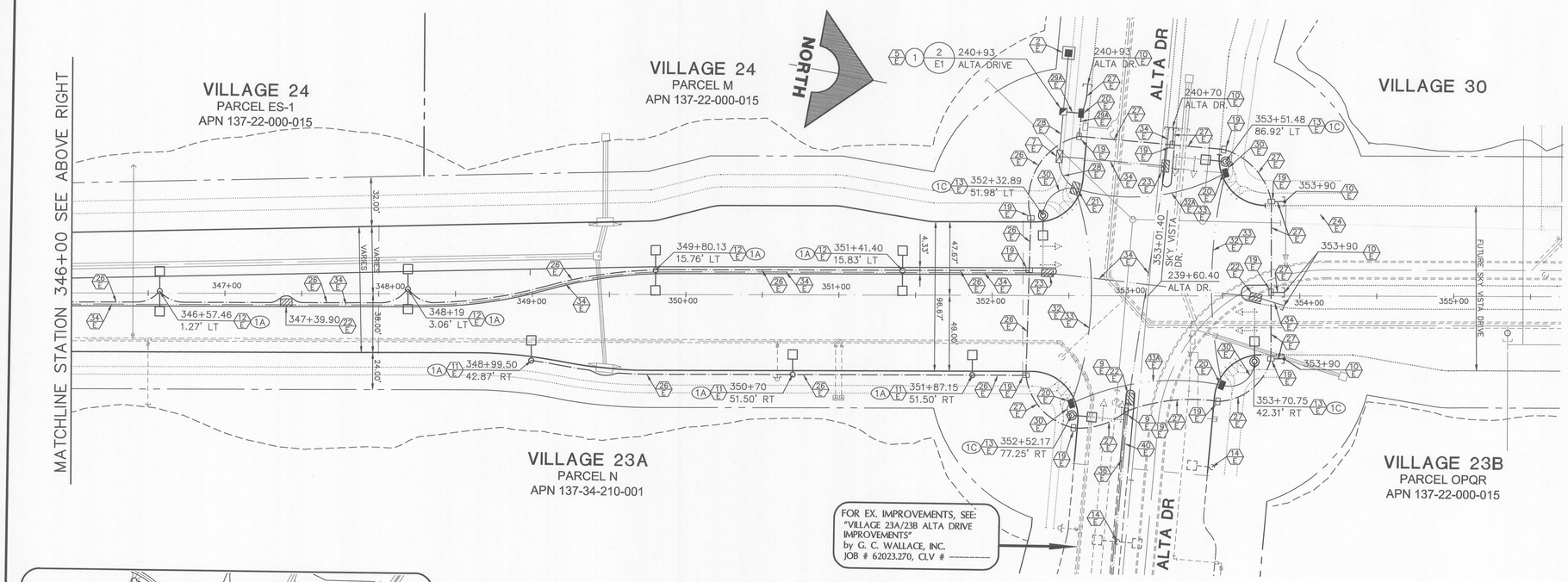
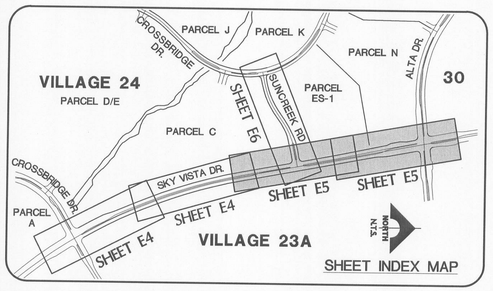




SKY VISTA DRIVE

SCALE: 1"=40'

SCALE 40 0 40 80 FEET



Call before you UnderGround 1-702-455-7511 1-702-229-6611

Avoid cutting underground utility lines. It's costly. Call before you Dig. 1-800-227-2600 UNDERGROUND SERVICE (USA)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY. CALL BEFORE YOU DIG OVERHEAD 1-702-227-2929

PROFESSIONAL ENGINEER – STATE OF NEVADA – JOHN T. BROWN Exp. 12/31/2008 ELECTRICAL No. 16033

DATE: _____
FOR ELECTRICAL COMPONENTS ONLY

ELECTRICAL CONSTRUCTION NOTES

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2E PROPOSED N.P.CO. TRANSFORMER
3E EXISTING SP4. REFER TO ELECTRICAL SERVICE NOTES
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29AE PROPOSED (2) 2" CONDUIT CONTAINING 2#4, 1#8 GND [STREET LIGHTING]
30E PROPOSED 2" CONDUIT CONTAINING 2#10, 1#8 GND [INTERSECTION LUMINAIRES] AND 2" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL]
31E PROPOSED 2" CONDUIT ONLY [FUTURE SCHOOL FLASHER]
32E PROPOSED 3" CONDUIT CONTAINING 2#10, 1#8 GND [INTERSECTION LUMINAIRES]
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33E PROPOSED 3" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL]
33AE PROPOSED (2) 3" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL]
34E PROPOSED 4" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL INTERCONNECT W/2' RADIUS BENDS]
35E EXISTING 1-1/4" CONDUIT CONTAINING 2#4, 1#8 GND [STREET LIGHTING]
35AE EXISTING (2) 1-1/4" CONDUIT CONTAINING 2#4, 1#8 GND [STREET LIGHTING]
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38E EXISTING 2" CONDUIT ONLY [POWER TO TRAFFIC SIGNAL CONTROLLER] INSTALL 2#4, 1#8 GND IN EXISTING CONDUIT [SP5]
39E EXISTING (4) 3" CONDUITS CONTAINING 2#10, 1#10 GND EACH [STREET LIGHTING] EXISTING (1) 3" EXISTING CONDUIT ONLY [FUTURE TRAFFIC SIGNAL] EXISTING (1) 4" CONDUIT ONLY [FUTURE TRAFFIC INTERCONNECT]
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47E EXISTING 1-1/4" CONDUIT ONLY ADD 2#4, 1#8 GND [STREET LIGHTING]
47AE EXISTING 1-1/4" CONDUIT ONLY [STREET LIGHTING] ADD (2) 2#4, (2) 1#8 GND
47BE EXISTING 1-1/4" CONDUIT CONTAINING 2#4, 1#8 GND [STREET LIGHTING] ADD 2#4, 1#8 GND
48E CONNECT NEW 2#4, 1#8 GND TO EXISTING 2#4, 1#8 GND (CIRCUIT 5B) [STREET LIGHTING]

ENGINEER – STATE OF NEVADA – VICKI D. MARJERRISON No. 13581 PROFESSIONAL CIVIL
DATE: 5-14-14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

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VILLAGE 24 - UNIT 2 IMPROVEMENTS
STREET LIGHT, MASTER CONDUIT AND ELECTRICAL PLAN 5 - SKY VISTA DRIVE

DRAWING E5
75 OF 82 SHTS

CLV DRAWING NO. XXXXX

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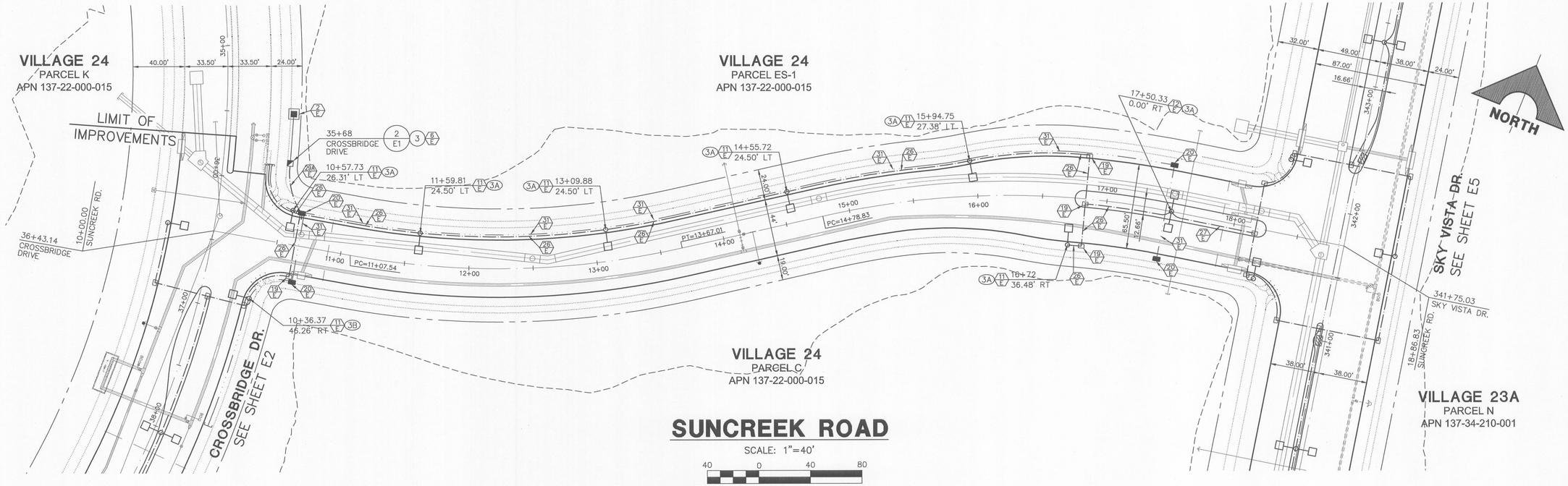

ELECTRICAL CONSTRUCTION NOTES

1E EXISTING N.P.CO. TRANSFORMER
2E PROPOSED N.P.CO. TRANSFORMER
3E EXISTING SP4. REFER TO ELECTRICAL SERVICE NOTES
4E EXISTING SP5. REFER TO ELECTRICAL SERVICE NOTES
5E PROPOSED SP1. REFER TO ELECTRICAL SERVICE NOTES & DETAIL 2 SHEET E1
6E PROPOSED SP3. REFER TO ELECTRICAL SERVICE NOTES & DETAIL 2 SHEET E1
7E PROPOSED TRAFFIC SIGNAL CONTROLLER CABINET REFER TO DETAIL 1 SHEET E1
8E EXISTING TRAFFIC SIGNAL CONTROLLER CABINET
9E CONNECT TO EXISTING CONDUIT STUB
10E STUB OUT AND CAP
11E PROPOSED TYPE 2B SINGLE LUMINAIRE PER SSD E-1
11AE PROPOSED TYPE 2C SINGLE LUMINAIRE PER SSD E-1
12E PROPOSED TYPE 2B TWIN LUMINAIRE PER SSD E-1
13E PROPOSED TYPE 2A MOD 1 LUMINAIRE WITH PROVISION FOR FUTURE TRAFFIC SIGNAL MAST ARM PER SSD E-1
14E EXISTING STREET LIGHT
15E EXISTING NO. 3-1/2 PULLBOX
16E EXISTING NO. 5 PULLBOX
17E EXISTING NO. 7 PULLBOX
18E EXISTING TYPE 200 PULLBOX
19E PROPOSED NO. 3-1/2 PULLBOX PER USD 326
20E PROPOSED NO. 5 PULLBOX PER USD 326
21E PROPOSED NO. 7 PULLBOX PER USD 326
22E PROPOSED P30 PULLBOX PER USD 404.132
23E PROPOSED TYPE 200 PULLBOX PER USD 404.133
24E FUTURE TYPE 2B SINGLE LUMINAIRE PER SSD E-1
25E FUTURE CONDUIT
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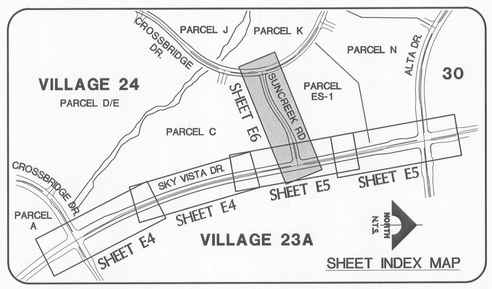

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Avoid cutting underground utility lines. It's costly. Call before you Dig. 1-800-227-2600 UNDERGROUND SERVICE (USA)

AVOID HITTING OVERHEAD POWER LINES. IT'S DEADLY. CALL BEFORE YOU DIG OVERHEAD 1-702-227-2929

PROFESSIONAL ENGINEER — STATE OF NEVADA — JOHN T. BROWN Exp. 12/31/2008 ELECTRICAL No. 16033

DATE: _____ FOR ELECTRICAL COMPONENTS ONLY

PROFESSIONAL ENGINEER — STATE OF NEVADA — VICKI D. MARJERRISON Exp. 12/31/2015 CIVIL No. 13079

DATE: 5-14-14

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VILLAGE 24 - UNIT 2 IMPROVEMENTS

STREET LIGHT, MASTER CONDUIT AND ELECTRICAL PLAN 6 - SUNCREEK ROAD

DRAWING E6
76 OF 82 SHTS

CLV DRAWING NO. XXXXX

emorjerrison

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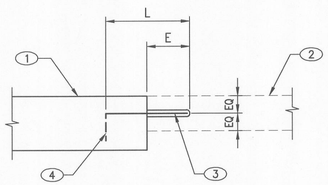
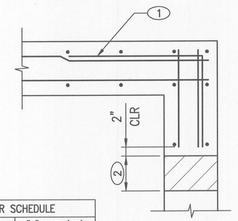


1. TRANSITION STRUCTURE
2. RCB
3. #5 REBAR x "L" DOWEL @ 1'-0" OC MAX (ROOF, FLOOR, AND WALL)
4. PROVIDE HOOK WHERE SPACE DOES NOT PERMIT STRAIGHT BAR

BAR LENGTH/EMBEDMENT SCHEDULE (INSTALL PER ICC ER-6010)		
RCB TYPE	E	L
PRECAST RCB	7 1/2"	1'-8"
CAST-IN-PLACE RCB	1'-0"	2'-0"

3 TYPICAL DOWEL CONNECTION

SCALE: 3/4" = 1'-0" CC01-0004



1. MATCH SIZE, SPACING, AND NUMBER, AND LAP WITH HORIZ BARS "L" "L"
2. PIPE WALL (WHERE OCCURS)

BAR SCHEDULE	
BAR SIZE	"L" LAP (IN.)
4	15
5	19
6	23
7	27

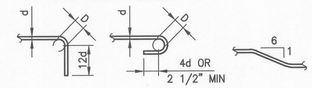
A. NOTES: TERMINATE CORNER BAR WHERE REQ'D TO CLEAR PIPE

5 TYPICAL CORNER DETAIL

SCALE: 3/4" = 1'-0" CC01-0003

BEND NOTES:

1. ALL BENDS SHALL BE MADE COLD.
2. #14 AND #18 BARS SHALL BE BEND TESTED AND LAB APPROVED PRIOR TO BENDING.

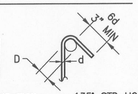


90° STD HOOK 180° STD HOOK MAX OFFSET BEND

D=6d FOR #3 TO #8
D=8d FOR #9 TO #11
D=10d FOR #14 AND #18

PRINCIPAL REINFORCING

MIN D=1 1/2" FOR #3
MIN D=2" FOR #4
MIN D=2 1/2" FOR #5



STIRRUPS AND TIES 135° STD HOOK

BAR BENDS

BAR SIZE	LAP CLASS	f'c = 4500 psi TOP BARS CASE 1	TOP BARS CASE 2	OTHER BARS CASE 1	OTHER BARS CASE 2
#3	A	18	27	14	21
	B	23	35	18	27
#4	A	24	35	18	27
	B	31	46	24	35
#5	A	30	44	23	34
	B	38	57	30	44
#6	A	35	53	27	41
	B	46	69	35	53
#7	A	51	77	40	59
	B	67	100	51	77
#8	A	59	88	45	68
	B	76	114	59	88
#9	A	66	99	51	76
	B	86	128	66	99
#10	A	74	111	57	86
	B	96	144	74	111
#11	A	82	123	64	95
	B	107	160	82	123

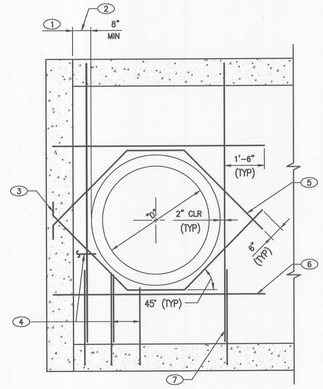
LAP SCHEDULE

2 REINFORCING LAP SPLICING

SCALE: 1/2" = 1'-0" SCH1-0004

LAP SPLICE NOTES:

1. TABLE FOR USE WITH NORMAL WEIGHT HARDROCK CONCRETE AND GRADE 60 UNCOATED REINF BARS.
2. CLASS A – HALF OR LESS OF THE BARS ARE SPLICED WITHIN A REQ'D LAP LENGTH. CLASS B – MORE THAN HALF OF THE BARS ARE SPLICED WITHIN A REQ'D LAP LENGTH.
3. TOP BARS ARE HORIZ BARS W/ 12" OR MORE OF CONCRETE CAST IN THE MEMBER BELOW THE BAR.
4. LAP SPLICES OF INDIVIDUAL BARS WITHIN A BUNDLE SHALL BE 1.2 Ld FOR THAT BAR IN A 3-BAR BUNDLE AND 1.33 Ld FOR A 4-BAR BUNDLE. ENTIRE BUNDLES SHALL NOT BE LAP SPLICED AT THE SAME LOCATION. SPLICES FOR INDIVIDUAL BARS WITHIN A BUNDLE SHALL BE STAGGERED SUCH THAT THEY DO NOT OVERLAP.
5. Ld-ASIC LAP LENGTH, SHOWN AT RIGHT, (IN INCHES).
6. CASE SELECTION:
   - -FOR FOUNDATION REINF USE CASE 1 UNO
   - -FOR COLUMN REINF AND DOWELS USE CASE 1 UNO
   - -FOR BEAM REINF USE CASE 1 UNO
   - -FOR STRUCT SLAB REINF USE CASE 2 UNO
   - -FOR SLAB ON GRADE REINF USE CASE 1 UNO
   - -FOR WALL REINF AND DOWELS USE CASE 1 (EXCEPT AS NOTED BELOW) UNO
   - -FOR WALLS WITH A SINGLE MAT OF STEEL CENTERED IN THE WALL, USE CASE 1 FOR WALL REINF AND DOWELS UNO
   - -FOR CHORD STEEL REINF USE CASE 2 UNO
   - -FOR DRILLED SHAFTS USE CASE 1 UNO

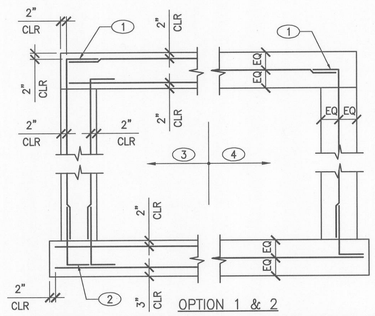


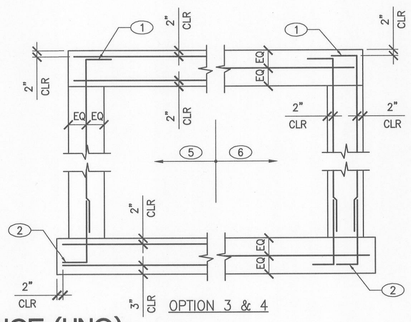
1. WALL THICKNESS
2. EDGE DISTANCE SEE NOTE A
3. BEND BARS AS REQ'D WHERE SPACE DOES NOT PERMIT A TYP BAR EXTENSION
4. FIELD CUT TO REINF 2" CLR OF PIPE
5. #5 BAR EF TOP AND BOTTOM. PLACE 2" CLR OF PIPE. (4 TOTAL)
6. PROVIDE ADD'L HORZ BARS WHERE TYP HORZ REINF IS INTERRUPTED. MIN ONE BAR ABOVE AND BELOW PIPE TO MATCH TYP HORIZ REINF
7. WHERE REQ'D BY NOTE A, PROVIDE ADD'L VERT BARS W/ FOOTING DOWELS, EITHER SINGLE MAT OR DOUBLE MAT, AS THE CASE MAY BE

A. NOTES: WHERE EDGE DISTANCE IS GREATER THAN PIPE DIAMETER "D" PROVIDE ADD'L VERT BARS IN AN AMOUNT EQUAL TO ONE-HALF THE VERT BARS INTERRUPTED AT THE PIPE

4 TYP WALL PIPE PENETRATION DETAIL

SCALE: 3/8" = 1'-0" CC01-0006





1. HOOK (WHERE OCCURS)
2. ROTATE BARS TO FIT
3. ALL DOUBLE REINF MAT
4. ALL SINGLE REINF MAT
5. SINGLE MAT WALL-DOUBLE MAT FLOOR/ROOF
6. DOUBLE MAT WALL-SINGLE MAT FLOOR/ROOF

1 TYPICAL REINFORCING CLEAREANCE (UNO)

SCALE: 1" = 1'-0" CC01-0002

GENERAL STRUCTURAL NOTES:

N REPRESENTS A FLAG NOTE, SEE PLANS.

1 48" TYPE I MANHOLE PER CLARK COUNTY USD 403.

2 STANDARD MANHOLE STEPS PER CLARK COUNTY USD 410.

1. INVERTS, SLOPES, BEARINGS, ALIGNMENTS, FINISH GRADE, MANHOLE RIM ELEVATION AND WORKPOINTS SHOWN FOR RCP AND RCB ARE "REFERENCE ONLY". PLANS AND PROFILES ON CIVIL DRAWINGS SHALL GOVERN.
2. CONSTRUCT JUNCTION STRUCTURES TO MATCH ENDS OF REINFORCED CONCRETE BOX CULVERTS (WHERE THEY OCCUR) AS REQUIRED.
3. ALL PIPE INLETS AND OUTLETS SHALL BE MITERED FLUSH OR SLIGHTLY RECESSED, WITH THE FACE OF THE INTERIOR WALLS.
4. CONTRACTOR SHALL PROVIDE SLOPE STABILIZATION, SHEETING, BRACING, AND/OR SHORING AS REQUIRED TO PROTECT EXISTING EMBANKMENTS, STRUCTURES, AND UNDERGROUND ITEMS.
5. CONCRETE: ALL CONCRETE SHALL BE CLASS D WITH A MINIMUM ULTIMATE COMPRESSIVE STRENGTH f'c=4500psi AT 28 DAYS. ALL CONCRETE SHALL BE MADE USING TYPE V CEMENT. ALL EXPOSED CORNERS SHALL BE BEVELED 3/4" UNLESS OTHERWISE NOTED.
6. REINFORCING STEEL: ALL REINFORCING STEEL SHALL BE ASTM A615, GRADE 60. DIMENSIONS ARE FROM OUT TO OUT OF BARS. MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 2" UNLESS OTHERWISE NOTED. HOOKS MAY BE ROTATED OR TILTED AS NECESSARY TO PROVIDE PROPER CLEARANCES.
7. BEDDING MATERIAL: BEDDING MATERIAL SHALL BE 6" OF CLARK COUNTY TYPE II AGGREGATE. THE BEDDING LAYER SHALL BE COMPACTED TO AT LEAST 90 PERCENT OF THE MAXIMUM DRY DENSITY AS ESTABLISHED BY ASTM TEST METHOD D-1557.
8. EXISTING UTILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES WITHIN THE WORK AREA, AND PROVIDING PROTECTION FOR THE VARIOUS UTILITIES EFFECTED PRIOR TO PROCEEDING WITH THE WORK.
9. GALVANIZING: ALL EXPOSED METAL PARTS SHALL BE GALVANIZED AND ALL GALVANIZING DAMAGED BY FABRICATION OR INSTALLATION SHALL RECEIVE TWO COATS OF ALUMINIUM PAINT (GALVANIZED OR EQUAL).
10. EPOXY: EPOXY SHALL BE SIMPSON SET EPOXY OR APPROVED EQUAL. INSTALL PER ICC REPORT ER-6010 IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
11. DESIGN SPECIFICATIONS: AASHTO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1998" AND INTERIMS THROUGH 2000. REINFORCED CONCRETE BASED ON LOAD FACTOR DESIGN.
12. REFERENCE GEOTECHNICAL REPORT BY OWENS GEOTECHNICAL, INC., MAJOR ROADWAYS AND WATERLINES VILLAGE 24, SUMMERLIN, PROJECT NO. E-06-224, DATED FEBRUARY 7, 2007.

STATE OF NEVADA PROFESSIONAL ENGINEER ERIC S. CUTSTAFUL No. 14570 — DATE: 5/14/14

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VILLAGE 24 - UNIT 2 IMPROVEMENTS
STORM DRAIN STRUCTURAL DETAILS I

DRAWING S1
77 OF 82 SHTS

CLV DRAWING NO. XXXXX

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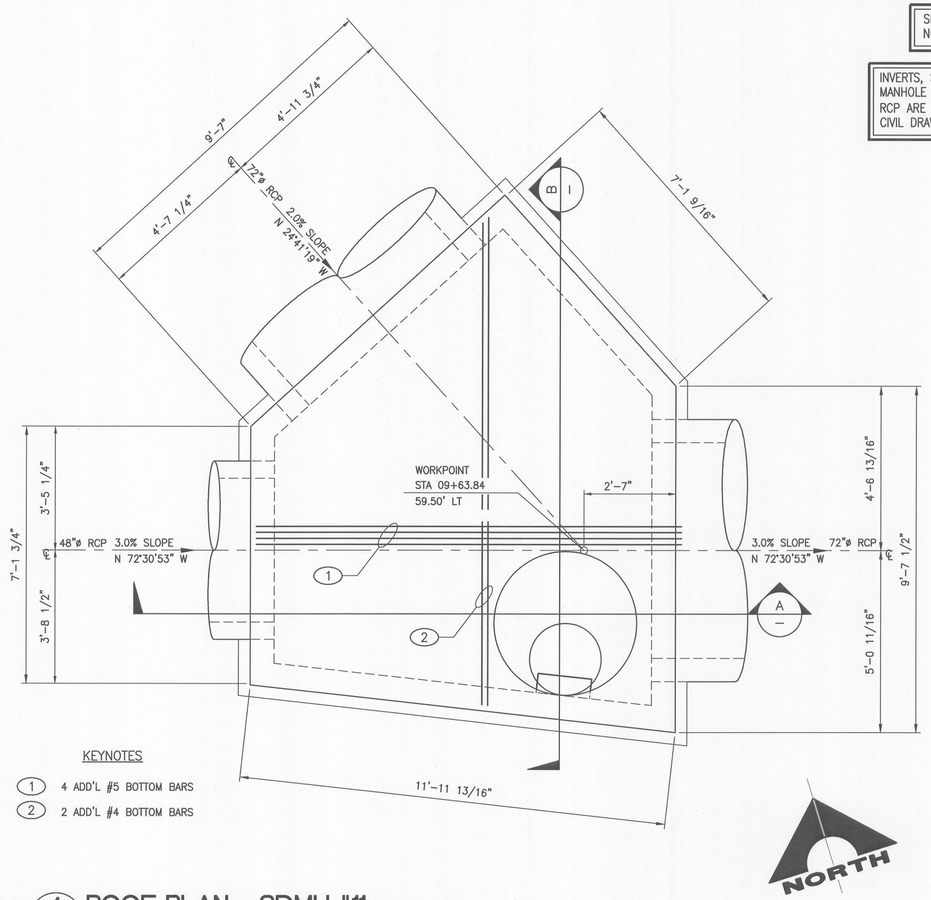
cse2435.dwg 080712.rh

SEE SHEET S1 FOR GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS.

INVERTS, SLOPES, BEARINGS, ALIGNMENTS, FINISH GRADE, MANHOLE RIM ELEVATIONS AND WORKPOINTS SHOWN FOR RCP ARE "REFERENCE ONLY". PLANS AND PROFILES ON CIVIL DRAWINGS SHALL GOVERN.

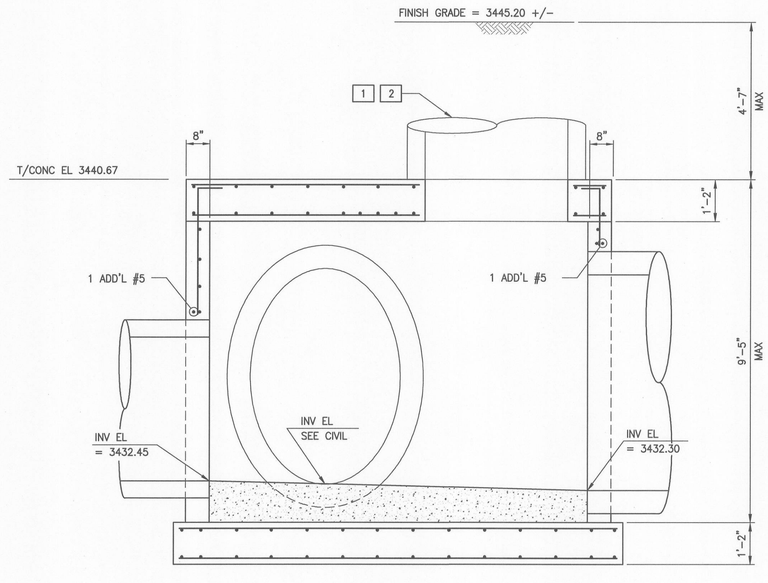


KEYNOTES

1. 4 ADD'L #5 BOTTOM BARS
2. 2 ADD'L #4 BOTTOM BARS

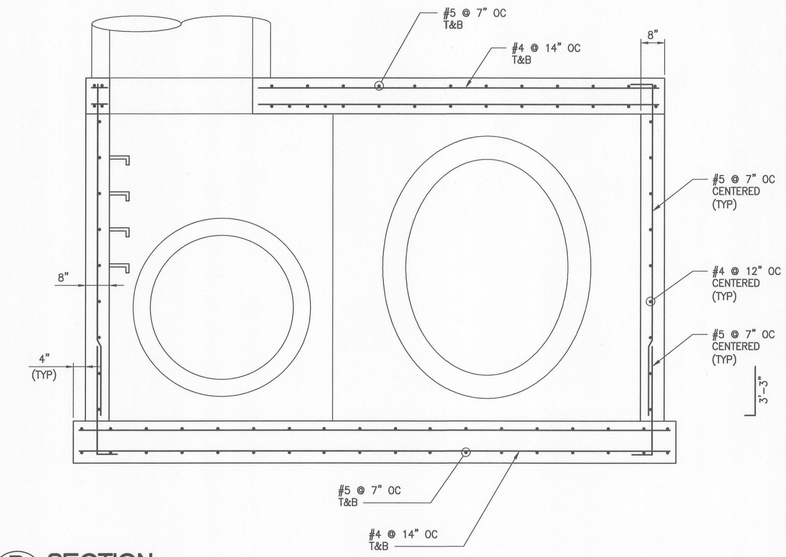
1 ROOF PLAN - SDMH #11

SCALE: 1/2" = 1'-0"



A SECTION

SCALE: 1/2" = 1'-0"



B SECTION

SCALE: 1/2" = 1'-0"

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

ERIC G. GILES, Exp. 06/30/2015, CIVIL / STRUCTURAL, STATE OF NEVADA, PROFESSIONAL ENGINEER, No. 14570

DATE: 5/14/14

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PROJECT NO. 62A.24.212

DESIGN:
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PLOT DATE: 05-14-14
PLOT TIME: 14:07:34

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VILLAGE 24 - UNIT 2 IMPROVEMENTS

STORM DRAIN STRUCTURAL DETAILS 2

DRAWING
S2
78 OF 82 SHTS

CLV DRAWING NO. XXXXX

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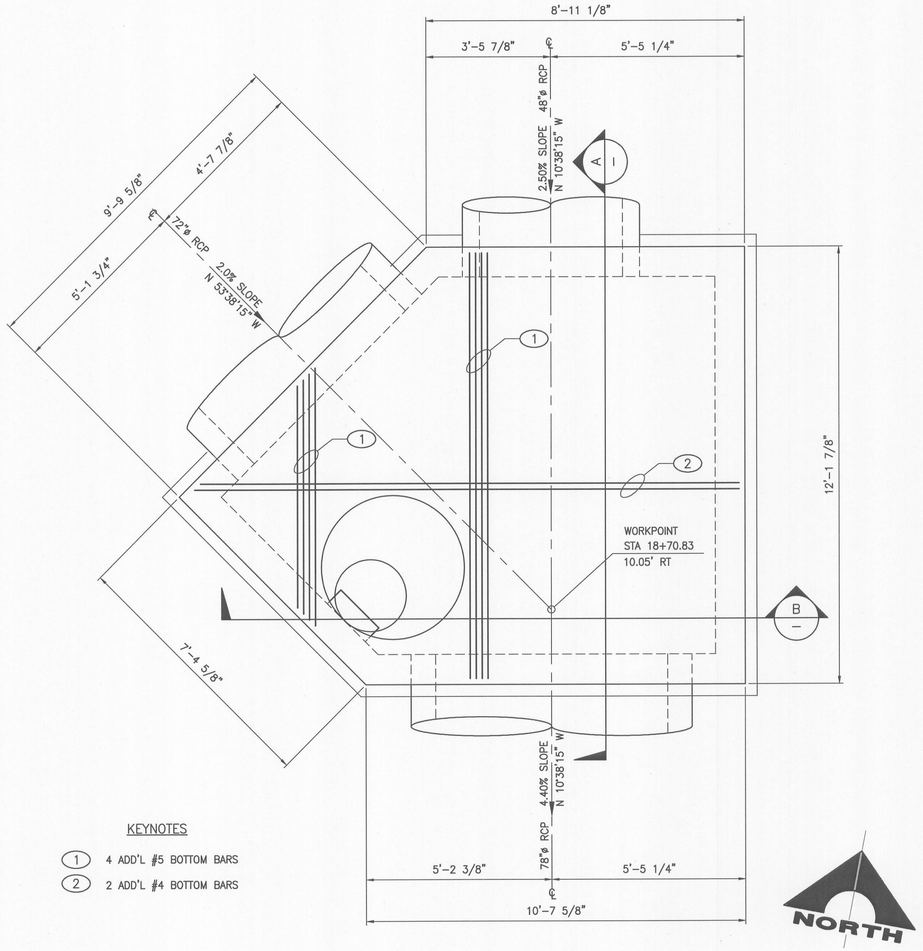
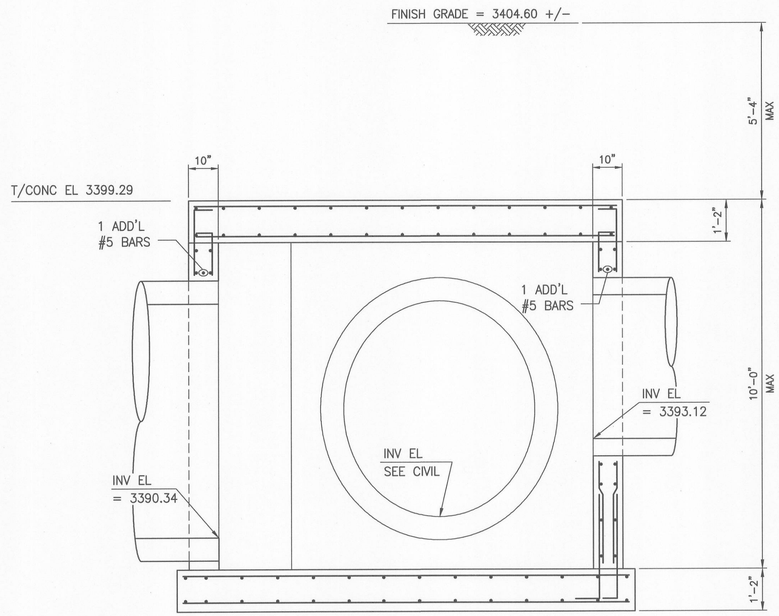


KEYNOTES

1. 4 ADD'L #5 BOTTOM BARS
2. 2 ADD'L #4 BOTTOM BARS

1 ROOF PLAN - SDMH #23

SCALE: 1/2" = 1-0"



A SECTION

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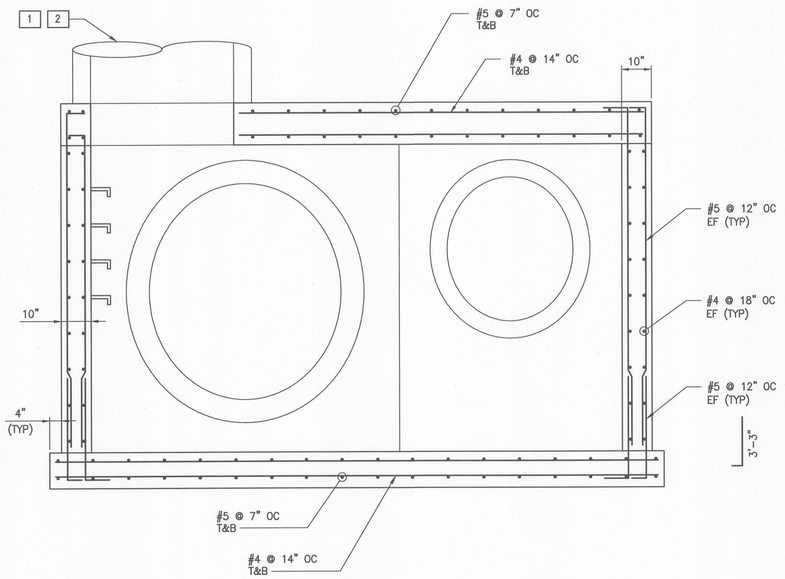

B SECTION

SCALE: 1/2" = 1'-0"

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

ENGINEER - STATE OF NEVADA
ERIC G. GILES
Exp. 06/30/2015
CIVIL / STRUCTURAL
No. 14570
PROFESSIONAL
DATE: 5/14/14

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

PROJECT NO. 62A.24.212

DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 14:07:41

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VILLAGE 24 - UNIT 2 IMPROVEMENTS

STORM DRAIN STRUCTURAL DETAILS 3

DRAWING
S3
79 OF 82 SHTS

CLV DRAWING NO. XXXXX

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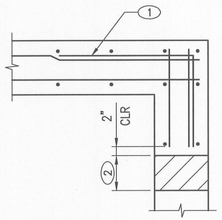
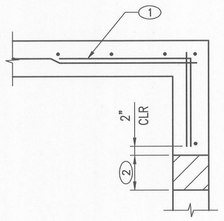
emarjerrison



TYPE I - DOUBLE MAT



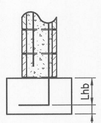
TYPE I - SINGLE MAT

BAR SCHEDULE	
BAR SIZE	"L" LAP (IN.)
4	15
5	19
6	23
7	27

1. MATCH SIZE, SPACING, AND NUMBER, AND LAP WITH HORIZ BARS "L" "L"
2. PIPE WALL (WHERE OCCURS) TERMINATE CORNER BAR WHERE REQ'D TO CLEAR PIPE

7 TYPICAL CORNER DETAIL

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



	Lhb PER ACI 318-02				
CONC. fc'(psi)	*2,500	3,000	3,500	4,000	4,500
BAR SIZE	*Lhb (IN)	Lhb (IN)	Lhb (IN)	Lhb (IN)	Lhb (IN)
4	8 1/2	8	7 1/2	7	6 1/2
5	11	10	9	8 1/2	8
6	13	12	11	10	9 1/2
7	15	13 1/2	12 1/2	12	11
8	17	15 1/2	14 1/2	13 1/2	13
9	19	17 1/2	16 1/2	15	14 1/2
10	21	19 1/2	18	17	16
11	24	22	20	19	18
*USE UNLESS DETAILED OTHERWISE	REFERENCE ONLY				

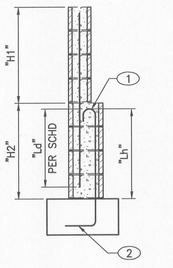
STANDARD HOOK LENGTH - CONCRETE SCHEDULE

8 - SCALE: 1/2" = 1'-0" SCH1-0002

BAR SIZE	BAR NEAR EDGE OF CELL					
	8" CMU			12" CMU		
	Lh (IN)	Ld (IN)	H1 MIN	Lh (IN)	Ld (IN)	H2 MIN
4	19	24	2'-0"	16	22	2'-0"
5	32	39	3'-4"	28	35	3'-4"
6	66	74	6'-8"	58	66	6'-0"
7	94	104	9'-0"	82	92	8'-0"
8	151	162	14'-0"	132	143	12'-0"
9	–	–	–	175	187	16'-0"
10	–	–	–	231	245	20'-8"
11	–	–	–	298	313	26'-8"

BAR SIZE	BAR CENTERED IN CELL					
	8" CMU			12" CMU		
	Lh (IN)	Ld (IN)	H1 MIN	Lh (IN)	Ld (IN)	H2 MIN
4	15	21	2'-0"	15	21	2'-0"
5	19	26	2'-8"	19	26	2'-8"
6	36	44	4'-0"	32	40	3'-4"
7	51	61	5'-8"	37	46	4'-0"
8	82	93	8'-0"	50	61	5'-8"
9	–	–	–	62	75	6'-8"
10	–	–	–	82	96	8'-0"
11	–	–	–	104	120	10'-0"

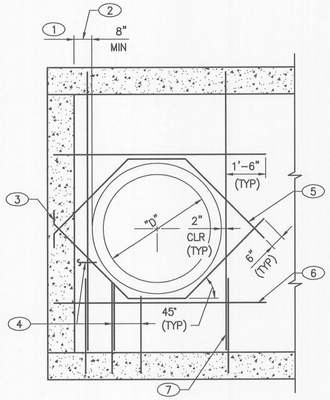
1. PROVIDE HOOK WHERE DIMENSION "H2" DOES NOT PERMIT A STRAIGHT LAP LENGTH. EXTEND HOOK LENGTH, Lh AS REQUIRED, TO DEVELOP LAP FOR UPPER BAR
2. STANDARD HOOK IN FOOTING



NOTE: H1 AND H2 REPRESENT THE MINIMUM HEIGHT OF WALL NECESSARY TO DEVELOP THE RESPECTIVE REBAR SIZE WITHOUT A HOOK

9 CMU REBAR LAP LENGTH

- SCALE: 1/2" = 1'-0" SCH1-0003

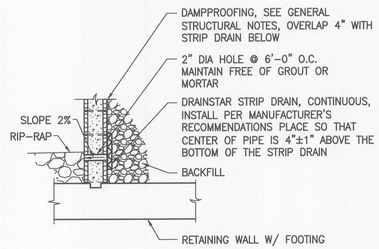


1. WALL THICKNESS
2. EDGE DISTANCE SEE NOTE A
3. BEND BARS AS REQ'D WHERE SPACE DOES NOT PERMIT A TYP BAR EXTENSION
4. FIELD CUT TO REINF 2" CLR OF PIPE
5. #5 BAR EF TOP AND BOTTOM. PLACE 2" CLR OF PIPE. (4 TOTAL)
6. PROVIDE ADD'L HORZ BARS WHERE TYP HORZ REINF IS INTERRUPTED. MIN ONE BAR ABOVE AND BELOW PIPE TO MATCH TYP HORIZ REINF
7. WHERE REQ'D BY NOTE A, PROVIDE ADD'L VERT BARS W/ FOOTING DOWELS, EITHER SINGLE MAT OR DOUBLE MAT, AS THE CASE MAY BE

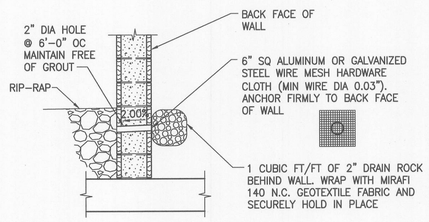
NOTES:
A. WHERE EDGE DISTANCE IS GREATER THAN PIPE DIAMETER "D" PROVIDE ADD'L VERT BARS IN AN AMOUNT EQUAL TO ONE-HALF THE VERT BARS INTERRUPTED AT THE PIPE

5 TYP WALL PIPE PENETRATION DETAIL

- SCALE: 3/8" = 1'-0" CC01-0006



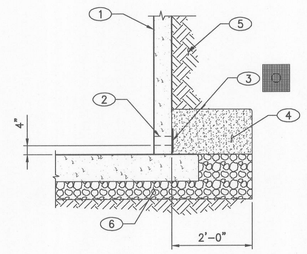
DRAIN DETAIL - OPTION II



DRAIN DETAIL - OPTION I

6 TYPICAL CORNER DETAIL

- SCALE: 1/2" = 1'-0"

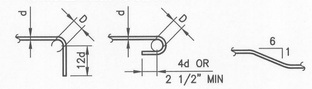


1. TRAPEZOIDAL OR RECTANGULAR CHANNEL
2. 4"ø SCHEDULE 40 PVC PIPE AT 30'-0" OC. CUT PIPE FLUSH W/ FACE OF CONCRETE
3. 12" SQ ALUMINUM OR GALVANIZED STEEL WIRE MESH HARDWARE CLOTH (MIN WIRE DIA 0.03")
4. 6 CU FT 3/4" DRAIN BACKFILL ENCAPSULATED W/ GEOTEXTILE FILTER FABRIC (MIRAFI 140NC OR APPROVED EQUAL) SURROUNDING POCKET W/ MIN 6" OVERLAP
5. BACKFILL PER GEOTECHNICAL REPORT
6. BASE MATL PER GEOTECHNICAL REPORT

2 TYPICAL WEEPHOLE

- SCALE: 3/8" = 1'-0" CC01-0021

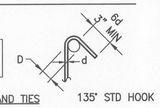
BEND NOTES:
1. ALL BENDS SHALL BE MADE COLD.
2. #14 AND #18 BARS SHALL BE BEND TESTED AND LAB APPROVED PRIOR TO BENDING.



D=6d FOR #3 TO #8
D=8d FOR #9 TO #11
D=10d FOR #14 AND #18

PRINCIPAL REINFORCING

MIN D=1 1/2" FOR #3
MIN D=2" FOR #4
MIN D=2 1/2" FOR #5



STIRRUPS AND TIES

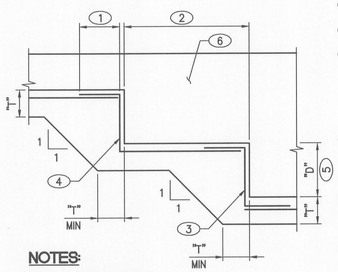
BAR BENDS

BAR SIZE	LAP CLASS	f'c = 4500 psi TOP BARS CASE 1	TOP BARS CASE 2	OTHER BARS CASE 1	OTHER BARS CASE 2
#3	A	18	27	14	21
	B	23	35	18	27
#4	A	24	35	18	27
	B	31	46	24	35
#5	A	30	44	23	34
	B	38	57	30	44
#6	A	35	53	27	41
	B	46	69	35	53
#7	A	51	77	40	59
	B	67	100	51	77
#8	A	59	88	45	68
	B	76	114	59	88
#9	A	66	99	51	76
	B	86	128	66	99
#10	A	74	111	57	86
	B	96	144	74	111
#11	A	82	123	64	95
	B	107	160	82	123

LAP SCHEDULE

3 REINFORCING LAP SPLICING

- SCALE: 1/2" = 1'-0" SCH1-0004



1. 18" LAP (TYP)
2. 2 x"D" (MIN)
3. REINFORCEMENT ARRANGEMENT OPTION I: #4 BAR SPACED TO MATCH LONGITUDINAL FOOTING REINF 18" 18"
4. REINFORCEMET ARRANGEMENT OPTION II: 18"
5. WALLS SHALL BE STEPPED 2'-0" MAX ONLY AS SHOWN ON THE PLANS
6. CONCRETE WALL

NOTES:
"T" = FOOTING THICKNESS
"D" = HEIGHT OF FOOTING STEP

4 STEPPED FOOTING DETAIL

- SCALE: 3/8" = 1'-0" CC01-0032

LAP SPLICE NOTES:

1. TABLE FOR USE WITH NORMAL WEIGHT HARDROCK CONCRETE AND GRADE 60 UNCOATED REINF BARS.
2. CLASS A - HALF OR LESS OF THE BARS ARE SPLICED WITHIN A REQ'D LAP LENGTH. CLASS B - MORE THAN HALF OF THE BARS ARE SPLICED WITHIN A REQ'D LAP LENGTH.
3. TOP BARS ARE HORIZ BARS W/ 12" OR MORE OF CONCRETE CAST IN THE MEMBER BELOW THE BAR.
4. LAP SPLICES OF INDIVIDUAL BARS WITHIN A BUNDLE SHALL BE 1.2 Ld FOR THAT BAR IN A 3-BAR BUNDLE AND 1.33 Ld FOR A 4-BAR BUNDLE. ENTIRE BUNDLES SHALL NOT BE LAP SPLICED AT THE SAME LOCATION. SPLICES FOR INDIVIDUAL BARS WITHIN A BUNDLE SHALL BE STAGGERED SUCH THAT THEY DO NOT OVERLAP.
5. Ld=ASIC LAP LENGTH, SHOWN AT RIGHT, (IN INCHES).
6. CASE SELECTION:
   -FOR FOUNDATION REINF USE CASE 1 UNO
   -FOR COLUMN REINF AND DOWELS USE CASE 1 UNO
   -FOR BEAM REINF USE CASE 1 UNO
   -FOR STRUCT SLAB REINF USE CASE 2 UNO
   -FOR SLAB ON GRADE REINF USE CASE 1 UNO
   -FOR WALL REINF AND DOWELS USE CASE 1 (EXCEPT AS NOTED BELOW) UNO
   -FOR WALLS WITH A SINGLE MAT OF STEEL CENTERED IN THE WALL, USE CASE 1 FOR WALL REINF AND DOWELS UNO
   -FOR CHORD STEEL REINF USE CASE 2 UNO
   -FOR DRILLED SHAFTS USE CASE 1 UNO

GENERAL STRUCTURAL NOTES:

1. INVERTS, SLOPES, BEARINGS, ALIGNMENTS, FINISH GRADE, MANHOLE RIM ELEVATION AND WORKPOINTS SHOWN FOR RCP AND RCB ARE "REFERENCE ONLY." PLANS AND PROFILES ON CIVIL PLANS SHALL GOVERN.
2. ALL PIPE INLETS AND OUTLETS SHALL BE MITRED FLUSH OF SLIGHTLY RECESSED, WITH THE FACE OF THE INTERIOR WALLS.
3. ALL WALLS ARE SUBJECT TO APPROVAL BY THE CITY OF LAS VEGAS, NEVADA, BUILDING DEPARTMENT.
4. REFER TO CIVIL PLANS FOR TOP OF FOOTING AND TOP OF WALL ELEVATIONS.
5. CONTRACTOR SHALL PROVIDE SLOPE STABILIZATION, SHEETING, BRACING AND/OR SHORING AS REQUIRED TO PROTECT EXISTING EMBANKMENTS, STRUCTURES AND UNDERGROUNFD ITEMS.
6. EXISTING UTILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES WITHIN THE WORK AREA AND PROVIDING PROTECTION FOR THE VARIOUS UTITLIES AFFECTED PRIOR TO PROCEEDING WITH WORK.

CONCRETE CONSTRUCTION:
1. ALL CONCRETE: SPECIFIED MINIMUM F'C @ 28 DAYS = 4500 PSI; MAXIMUM WATER-CEMENT RATIO = 0.45 PER ASTM C150.
2. FOOTING CONCRETE: DESIGN CALCULATION BASIS MINIMUM F'C = 2500 PSI @ 28 DAYS (THEREFORE NO SPECIIAL INSPECTION REQUIRED.
3. STEMWALL CONCRETE: DESIGN CALCULATION BASIS MINIMUM F'C = 4500 PSI @ 28 DAYS (WHEN SPCIFICALLY USED).
4. REINFORCINFG STEEL: ASTM A615 GR 60. DIMENSIONS ARE FROM OUT TO OUT OF BARS. MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 2" UNLESS OTHERWISE NOTED. HOOKS MAY BE ROTATED OR TILTED AS NCESSARY TO PROVIDE PROPER CLEARANCES.
5. WHERE HOOKS ARE SHOWN, UNO, PROVIDE HOOKS IN ACCORDANCE WITH CRSI MANUAL OF STANDARD PRACTICE.

EPOXY:
6. EPOXY SHALL BE SIMPSON SET EPOXY OR APPROVED EQUAL. INSTALL PER ICC-ES REPORT ESR-1772 IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
7. SPECIAL INSPECTION REQUIRED FOR ALL EPOXY INSTALLATIONS PER IBC SECTION 1704.

CONCRETE MASONRY (CMU) CONSTRUCTION:
1. SPECIFIED MASONRY DESIGN STRESS: F'M = 1500 PSI
2. MASONRY UNITS: ASTM C90 GR N-1 HOLLOW CONCRETE UNITS.
3. MORTAR: ASTM C270, TYPE M OR S; MINIMUM COMPRESSIVE STRENGTH @ 28 DAYS = 1800 PSI.
4. GROUT: MINIMUM COMPRESSIVE STRENGHT @ 28 DAYS = 2000 PSI; USE TYPE V CEMENT PER ASTM C150.
5. REINFORCING STEEL: ASTM A615 GR 60.
6. REFER TO TYPICAL CMU WALL SECTIONS FOR ADDITIONAL INFORMATION. ALL BARS MUST BE LAPPED IN ACCORDANCE WITH THE LAP SCHEDULES. HOOKS MAY BE SUBSTITUTED FOR STRAIGHT LAPS; EXTEND HOOKS AS REQUIRED TO MATCH THE REQUIRED STRAIGHT LAP OF THE MATING BAR.
7. WALLS SHALL BE STEPPED ONLY AS NOTED ON THE CIVIL PLANS.
8. PROVIDE 1 1/2" X 3 1/2" CONTINUOUS KEY AS SHOWN OR EMBED FIRST COURSE ONE INCH INTO FOOTING.
9. PROVIDE WEEPHOLE DRAIN AS SHOWN ON TYPICAL DETAILS.
10. ALL MASONRY UNITS BELOW GRADE (ON EITHER SIDE) AND ALL CELLS CONTAINING REINFORCING SHALL BE GROUTED SOLID.
11. ALL CORNER AND TEE JOINTS SHALL BE TIED WITH REINFORCING AND GROUTED SOLID.
12. WHERE VERTICAL GROUT POURS ARE NOT CONTINUOUS FOR THE FULL WALL HEIGHT, TERMINATE LIFT 1 1/2" BELOW TOP OF BLOCK SO UPPER LIFTS ARE KEYED INTO LOWER LIFTS. CONFORM TO GROUTING REQUIREMENTS IN ACI 530.
13. UNLESS NOTED OTHERWISE, BATTER TOP OF CMU RETAINING WALLS INWARD (TOWARD SOIL) 1/8" PER FOOT. THIS DOES NOT APPLY TO FENCE WALLS ATOP RETAINING WALLS OR FENCE WALLS WITH LESS THAN 2'-0" RETAINED SOIL.
14. FULL ALLOWABLE MASONRY STRESSES ARE USED IN DESIGN. SPECIAL INSPECTION PER IBC 2003 SECTION 1704 AND PER THE CITY OF LAS VEGAS SHALL BE PROVIDED.

DESIGN SPECIFICATIONS
1. IBC 2006 AND AASHTO "STANDARD SPECIFICATONS FOR HIGHWAY BRIDGES, 2002".

GEOTECHNICAL INFORMATION:
1. SOILS REPORT PREPARED BY OWENS GEOTECHNICAL, INC., REPORT NO. E-06-224, DATED FEBRUARY 7, 2007.
   a. ALLOWABLE SOIL BEARING PRESSURE = 2000 PSF
   b. SOIL ACTIVE PRESSURE, EFP = 35 PSF/FT, LEVEL
   c. SOIL PASSIVE PRESSURE = 250 PSF/FT
   d. COEFFECIENT OF FRICTION = 0.40
   e. SEISMIC SITE CLASS = D
2. BACKFILL BEHIND WALLS AND FOUNDATION SUBGRADE SHALL BE PLACED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.

DAMPPROOFING:
1. DAMPPROOFING ELEMENTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, DETAILS AND MATERIALS.
2. APPLY 40-MIL KOCH WATCHDOG DAMPPROOFING MEMBRANE, AS MANUFACTURED BY KOCH MATERIALS COMPANY, ON SOIL SIDE OF ALL RETAINING WALLS.
3. INSTALL KOCH DRAINSTAR DRAIN BOARD OVER KOCH WATCHDOG DAMPPROOFING MEMBRANE FOR ALL RETAINING WALLS OVER 4'-8" HIGH.

MINIMUM STRAIGHT BAR LAP AND EMBEDMENT, Ld (INCHES)																
CMU BLOCK SIZE	6				8						12					
BAR SIZE	3	4	5	6	3	4	5	6	7	8	4	5	6	7	8	9	10	11
CENTERED IN CELL	16	21	33	63	16	21	26	44	61	93	21	26	40	46	61	75	96	120
NEAR EDGE OF CELL	–	–	–	–	16	24	39	74	104	162	22	35	66	92	143	187	245	313

1 CMU REBAR LAP SCHEDULE

- SCALE: 1/2" = 1'-0" SCH1-0001

STATE OF NEVADA - ERIC S. GILLES - No. 14570 - CIVIL - STRUCTURAL - 06/30/2015 - PROFESSIONAL ENGINEER - DATE: 3/14/14

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

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SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
DRAINAGE CORRIDOR STRUCTURAL DETAILS 1

emarjerison

DRAWING S4
80 OF 82 SHTS

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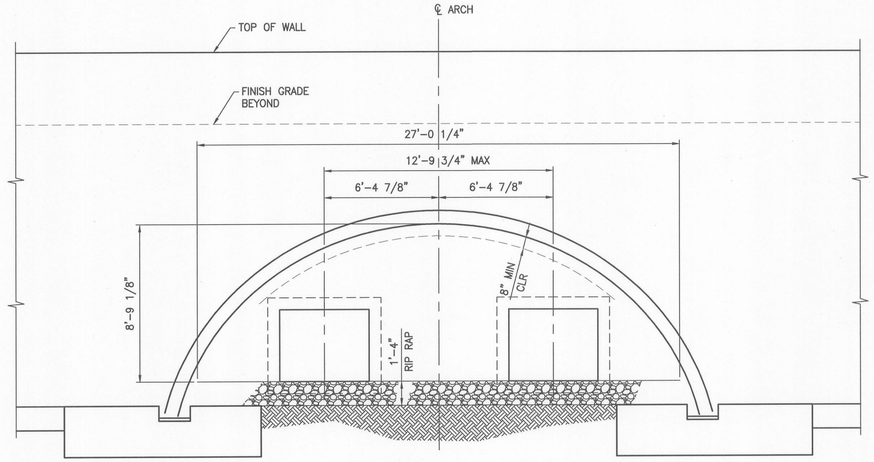
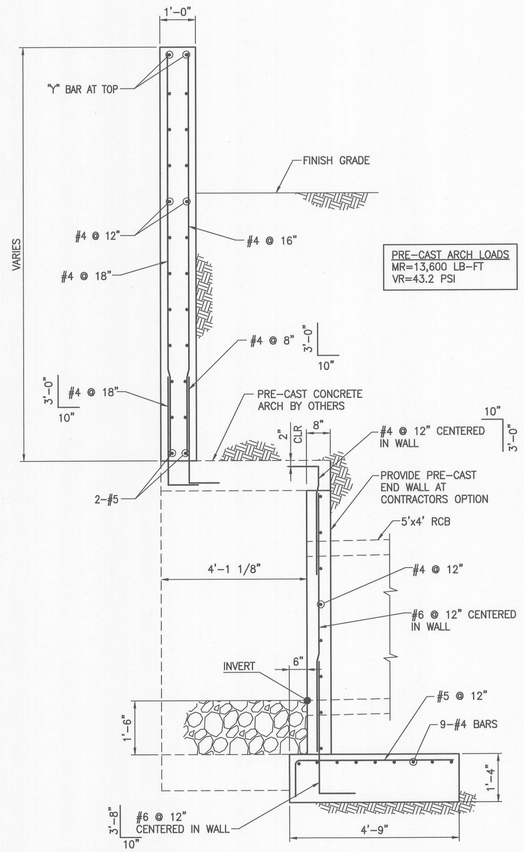
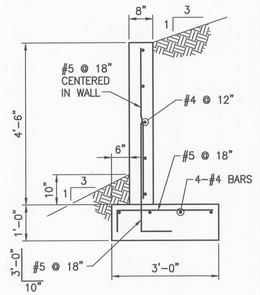


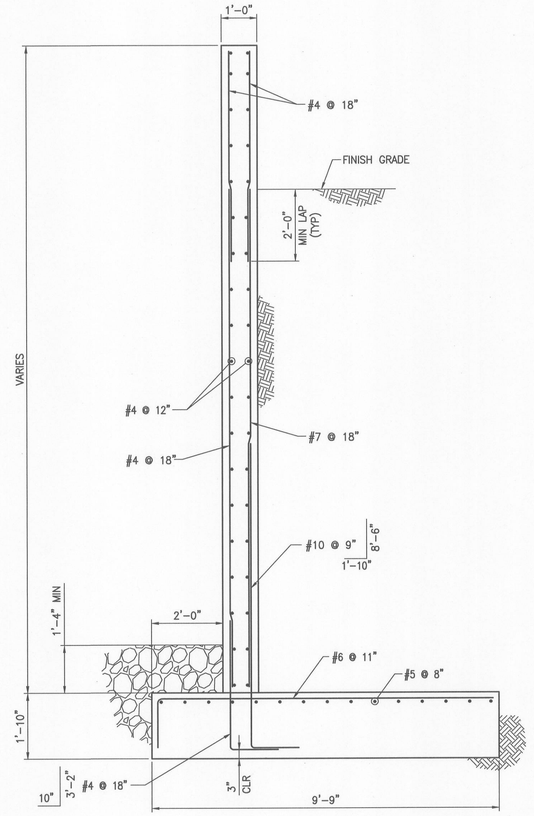
CONTECH ARCH (5'x4' RCB)





C CONCRETE RETAINING WALL
SCALE: 1/2" = 1'-0"

B CONCRETE CULVERT HEADWALL / RETAINING WALL
SCALE: 1/2" = 1'-0"



A CONCRETE RETAINING WALL
SCALE: 1/2" = 1'-0"

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

DATE: 5/14/14

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

PROJECT NO. 62A.24.212
DESIGN:
DRAWN:
CHECK:
PLOT DATE: 05-14-14
PLOT TIME: 14:07:55

G.C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
1555 S. RAINBOW BOULEVARD - LAS VEGAS, NV 89146
T: 702.804.2000 - F: 702.804.2299 - GCWALLACE.COM
LAS VEGAS - SACRAMENTO - RENO

SUMMERLIN
VILLAGE 24 - UNIT 2 IMPROVEMENTS
DRAINAGE CORRIDOR STRUCTURAL DETAILS 2

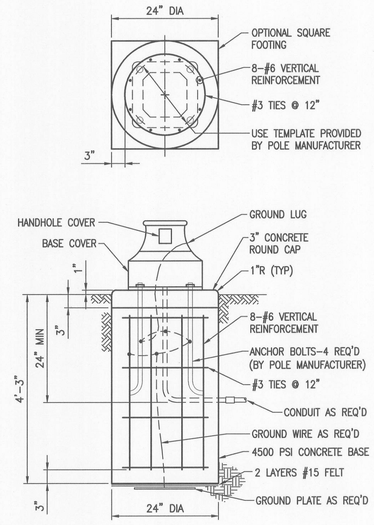
DRAWING
S5
81 OF 82 SHTS

CLV DRAWING NO. XXXXX

emcarjenson

F:\Projects\600\62024-221\DWG\Production\Unit2 TDS Plans\24U2c505-81.dwg

cse2435.dwg,080712.ctb

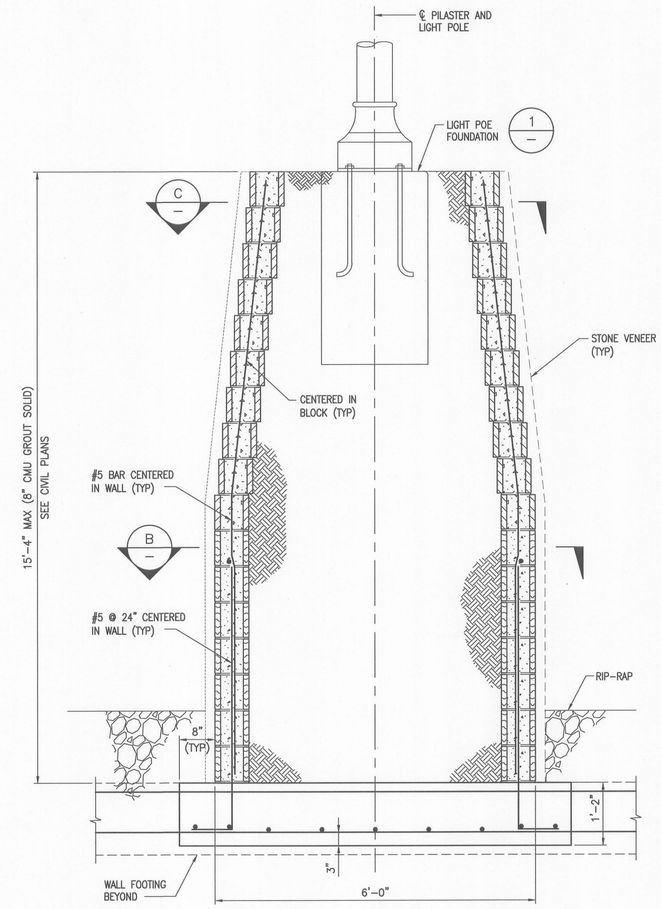


NOTES:

1. ALL CONCRETE SHALL BE TYPE V. CONCRETE CLASS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA.
2. PLACE CONCRETE AGAINST UNDISTURBED EARTH OR 95% COMPACTED BACKFILL FOR A 10' MIN RADIUS AROUND FOUNDATION.

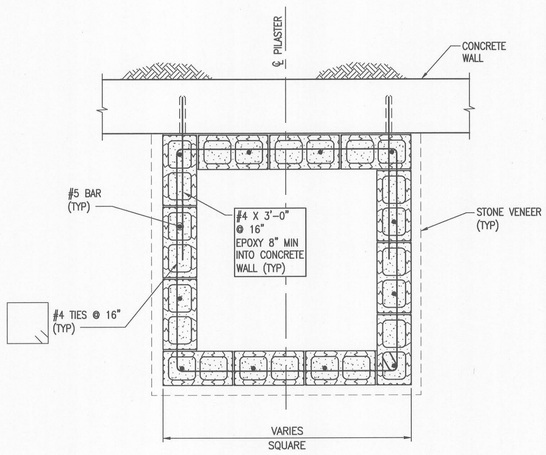
1 LIGHT POLE FOUNDATION

SCALE: NTS



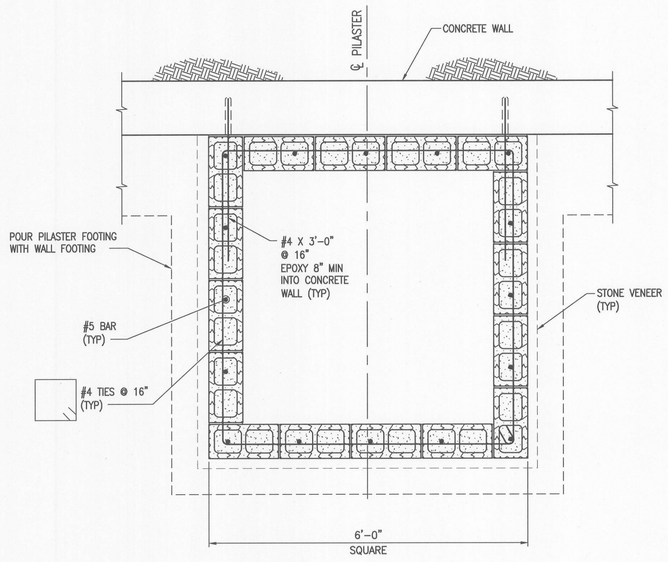
A TYPICAL SECTION

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



C SECTION

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



B SECTION

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

TDS SUBMITTAL 5-14-2014 - NOT FOR CONSTRUCTION

STATE OF NEVADA PROFESSIONAL ENGINEER ERIC G. GILES Exp. 06/30/2015 CIVIL/STRUCTURAL No. 14570

DATE: 5/14/14

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP

PROJECT NO. 62A.24.212

DESIGN: RDB
DRAWN: NO
CHECK: PKH
PLOT DATE: 05-14-14
PLOT TIME: 14:08:02

G.C. WALLACE COMPANIES
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LAS VEGAS · SACRAMENTO · RENO

SUMMERLIN

VILLAGE 24 - UNIT 2 IMPROVEMENTS

DRAINAGE CORRIDOR STRUCTURAL DETAILS 3

DRAWING
S6
82 OF 82 SHTS

CLV DRAWING NO. XXXXX

F:\Projects\600\62024-221\DWG\Production\Unit2 TDS Plans\24U2cS06-82.dwg emarjerrison

gcw2436.dwg.060712.rln

SUPPLEMENT TO
UPDATE #4 TO THE
TECHNICAL DRAINAGE STUDY
FOR
SUMMERLIN VILLAGE 23A/23B
ALTA DRIVE IMPROVEMENTS
(FOX HILL TO SKY VISTA)

62023B-206

August 2013

Prepared for:

The Howard Hughes Corporation
10000 W. Charleston Blvd., Suite 200
Las Vegas, Nevada 89135
Phone: (702) 791-4200
Fax: (702) 791-4450

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM			DATE: October 8, 2013
TO: Land Development Services Department of Public Works			FROM: Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for: Alta Drive Improvements (Fox Hill to Sky Vista) Summerlin Village 23A/23B – Update #4		COPIES TO: G. C. Wallace Inc.
Cross Streets:	Alta Drive between Sky Vista & Fox Hill		Howard Hughes Corporation
File Number:	F:\Depot\DSMemos\DS4571F.doc		Bart Anderson, P.E., DevCo
Parcel Number:	137-22-000-015		CCRFCD
Zoning Action:	N/A		
FEMA Flood Zone	YES	NO X	
Proposed Storm Drain	YES X	NO	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1st Submittal	9/11/2012	9/25/2012	Not Approved	$100.00	295587: $100
2nd Submittal	10/4/2012	10/16/2012	Conditional Approval	$400.00	297881: $400
CCRFCD	11/7/2012	11/19/2012	Concurrence Recv'd	N/C	N/C
3rd Submittal	8/13/2013	8/27/2013	Not Approved	$100.00	329618: $100
Supplemental	9/3/2013	9/4/2013	Conditional Approval	N/C	N/C
CCRFCD	9/24/2013	10/8/2013	Concurrence Recv'd	N/C	N/C
			TOTAL FEES (LDDRS):	$600.00	----

REMARKS:

The Drainage Study for the subject project has been reviewed and:

X	is approved subject to conformance to all City standards and the following conditions:
	must be resubmitted or supplemented including the following:
	is conditionally approved subject to Clark County Regional Flood Control District concurrence.
	is conditionally approved subject to Clark County Public Works Department concurrence.

The following comments are repeated until they are complete:

1. All the interim facilities such as but not limited to the openings, berms/channels and laterals etc. are owned and to be privately maintained by *Howard Hughes Corporation*.

2. Add a note in all pertinent sheets for the construction of all storm drain drop inlets per a newly adopted USDCCA Drawing No. 421 (*Stormwater Quality Management Stamp and Sign Detail*).

NOTE: Any future changes to the proposed design (or design assumptions) as outlined in the approved drainage study and attached preliminary grading plan which affect drainage must be addressed in a Drainage Study Amendment and accepted by the *City of Las Vegas Flood Control Section*. Additionally, conditional acceptance of a drainage study is valid for a period of one (1) year. If the proposed construction has not been completed in that time period, the *City of Las Vegas* reserves the right to require additional conditions and/or submission and acceptance of a complete drainage study update prior to further construction of a project.

NOTE: Please be advised that all land surface area disturbances over 1 acre or any area adjacent to a water way must submit to the *Nevada Division of Environmental Protection* a "Notice of Intent" to discharge that certifies a stormwater pollution prevention plan has been developed and is maintained on site; for inclusion in the Stormwater General Permit No. NVR100000. A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. For more information, including forms and applications see http://ndep.nv.gov/bwpc/storm01.htm or call (775) 687-9429.

END OF REMARKS
ays

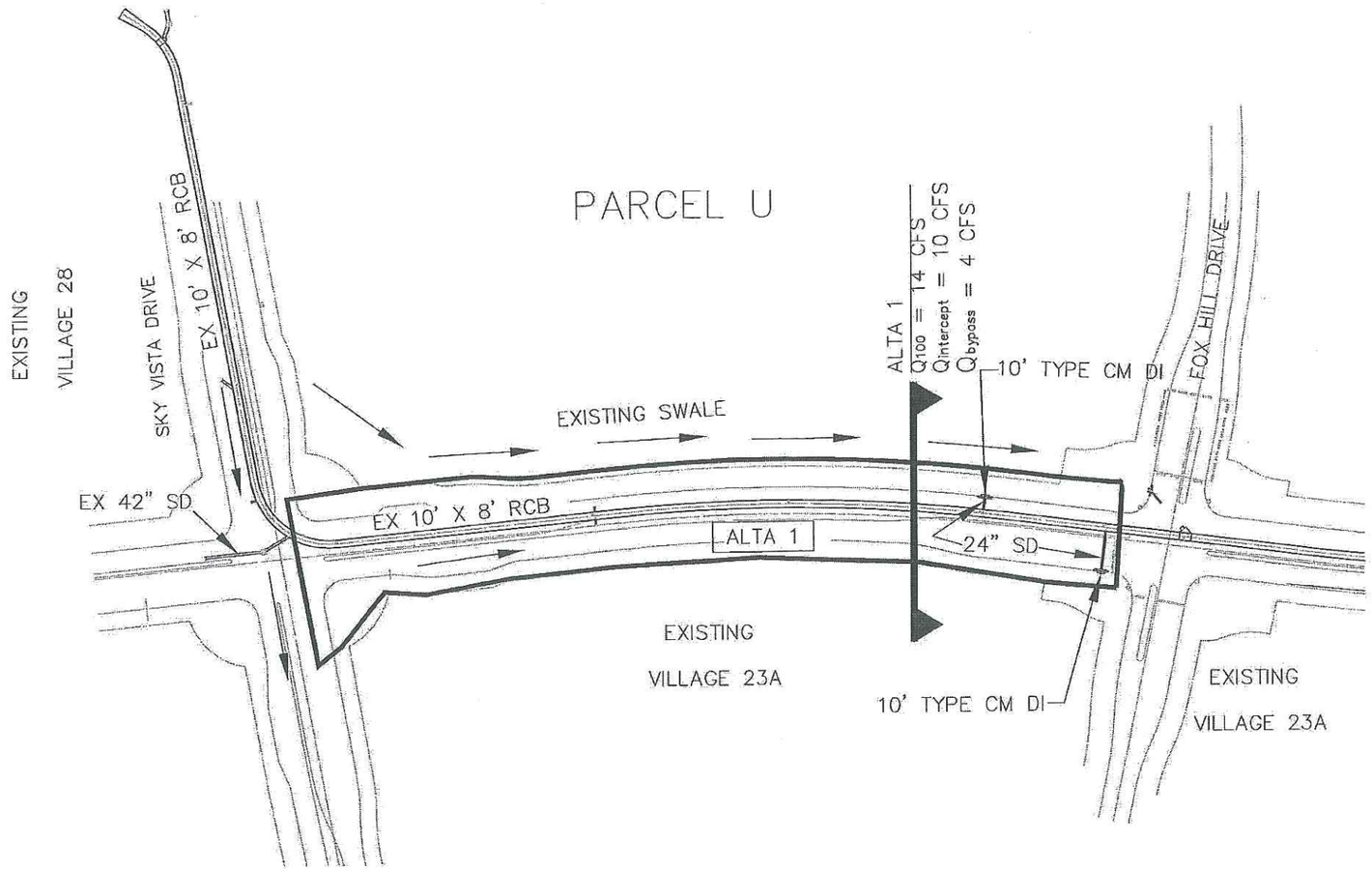
T/R/S: T20S/R59E/22
AREA K-22

FLOW SUMMARY		
BASIN	AREA ACRES	DEVELOPED CONDITIONS Q100 (CFS)
ALTA1*	3.7*	14*

* - Referenced from the *Technical Drainage Study for Summerlin Villages 23A/23B, Alta Drive Street Improvements*, approved December 30, 2003.

STREET FLOW CALCULATIONS					
Location	Slope %	Discharge (cfs)	Depth (ft)	Velocity (fps)	VxD
ALTA1*	3.0	14*	0.39	4.1	1.6

* - Referenced from the *Technical Drainage Study for Summerlin Villages 23A/23B, Alta Drive Street Improvements*, approved December 30, 2003.



NORTH

GRAPHIC SCALE

200 0 200 400

SCALE FEET

LEGEND

- STREET SECTION LOCATION
- ALTA 1 — BASIN NAME
- EXISTING RCB STROM DRAIN
- PROPOSED DROP INLET
- BASIN DELINEATION

G.C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
1555 S. RAINBOW BLVD · LAS VEGAS, NV 89146
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VILLAGE 23A/23B

ALTA DRIVE STREET IMPROVEMENTS

FIGURE 5

PROPOSED CONDITIONS DRAINAGE BASIN MAP

SHEET

FIG 5

1 OF 1 SHTS

F:\Projects\600\62023B-206\Division\Fctl\Figures\AltoP2-Fig5.dwg
08-07-13 14:27:55
Grant Tokumi

SUMMERLIN

SM

VILLAGE 23A/23B ALTA DRIVE PHASE 2

FOX HILL DRIVE TO SKY VISTA DRIVE

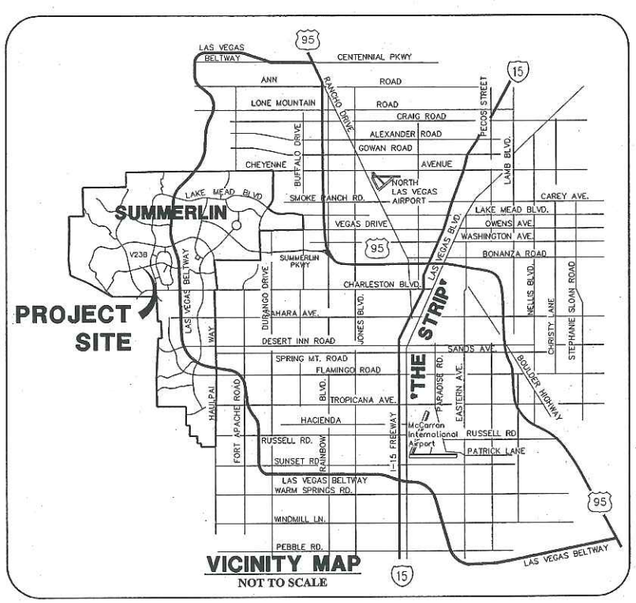
APN NUMBERS:

137-34-299-001, 137-34-210-004, 137-34-210-005, 137-34-111-004

SID #809 PROJECTS 11A, 11B AND 11C

SID #810 PROJECTS 7A, 7B AND 7C

2013



VICINITY MAP
NOT TO SCALE

OWNER/DEVELOPER

THE HOWARD HUGHES COMPANY, LLC
10801 W. CHARLESTON BLVD., 3RD FLOOR
LAS VEGAS, NEVADA 89135
OFFICE PHONE NO. (702) 791-4300
OFFICE FAX NO. (702) 791-4450

ENGINEER

G.C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
1555 S. RAINBOW BLVD · LAS VEGAS, NV 89146
T: 702.804.2000 · F: 702.804.2299 · GCWALLACE.COM

THE HOWARD HUGHES COMPANY, LLC

KEVIN ORROCK
TITLE: VICE PRESIDENT

DRAINAGE CERTIFICATION

I CERTIFY THAT THE GRADING PLANS ARE IN CONFORMANCE WITH THE APPROVED DRAINAGE STUDY ON FILE AT THE CITY OF LAS VEGAS FOR THIS PROJECT.

JOSHUA L. JOHNSON P.E. 15789 DATE

DAVID BOWERS, PE, PTOE, PE# 16736 DATE
CITY ENGINEER
CITY OF LAS VEGAS, NEVADA

APPROVAL OF THESE PLANS IS LIMITED TO THOSE IMPROVEMENTS CONSTRUCTED IN THE DEDICATED RIGHTS-OF-WAY AND/OR DEDICATED EASEMENTS. THIS APPROVAL DOES NOT AUTHORIZE THE CONSTRUCTION OF ANY IMPROVEMENTS THAT DEVIATE FROM ADOPTED STANDARDS AND/OR SPECIFICATIONS, EXCEPT THOSE SPECIFICALLY LISTED UNDER "DEVIATIONS FROM STANDARDS". THE ENGINEER SHALL RESOLVE ANY DEVIATION OTHER THAN THOSE LISTED IN "DEVIATIONS FROM STANDARDS" IN FAVOR OF THE UNIFORM STANDARD DRAWINGS AND SPECIFICATIONS CLARK COUNTY AREA NEVADA.

CLV PLANNING DEPARTMENT

THIS PLAN MEETS THE APPLICABLE STANDARDS OF THE CITY OF LAS VEGAS PLANNING DEPARTMENT

CHRIS KNIGHT, DIRECTOR BUILDING AND SAFETY DATE

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES MANAGER
PROJECT NO. 122081 DATE:
SHEETS 1-3, 5, 8-11

UTILITY/AGENCY APPROVALS

COX COMMUNICATIONS LAS VEGAS, INC. DATE

CENTRAL CO. DBA CENTURYLINK DATE

THE AFFIXED CENTURYLINK APPROVAL DOES NOT ASSUME OR GUARANTEE LIABILITY FOR KNOWN OR UNKNOWN CONFLICTS WITH EXISTING OR PROPOSED IMPROVEMENTS. RESOLUTION OF ANY CONFLICT WILL BE ACCOMPLISHED PURSUANT TO LOCAL ORDINANCES, NEVADA REVISED STATUTES AND/OR PUBLIC UTILITY COMMISSION RULES AND REGULATIONS.

NV ENERGY DATE

NEVADA POWER COMPANY ACKNOWLEDGES THAT WE HAVE RECEIVED YOUR PLANS AND WILL PROVIDE SERVICE TO ALL ELECTRICAL NEEDS ASSOCIATED WITH THIS PROJECT. NEVADA POWER COMPANY RESERVES THE RIGHT TO ADDRESS ANY EXISTING OR FUTURE CONFLICTS ONCE THE FINAL DESIGN IS COMPLETED. THE NEW SERVICE AND THE RESOLUTION OF ANY CONFLICTS WILL BE ACCOMPLISHED PURSUANT TO THE NEVADA PUBLIC UTILITY COMMISSION'S RULES AND REGULATIONS.

NV ENERGY – TRANSMISSION ENGINEERING DATE

SOUTHWEST GAS CORP. DATE

H #–
CLV #

STATE OF NEVADA — PROFESSIONAL ENGINEER — 15789 — DATE: 2/8/13

REV.	DATE	DESCRIPTION	DATE AGEN. APP	DATE ION. APP

DESIGN:
DRAWN:
CHECK:
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 08-05-13
PLOT TIME: 11:16:02

G.C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
1555 S. RAINBOW BLVD. | LAS VEGAS, NV 89146
T: 702.804.2000 · F: 702.804.2299 · GCWALLACE.COM

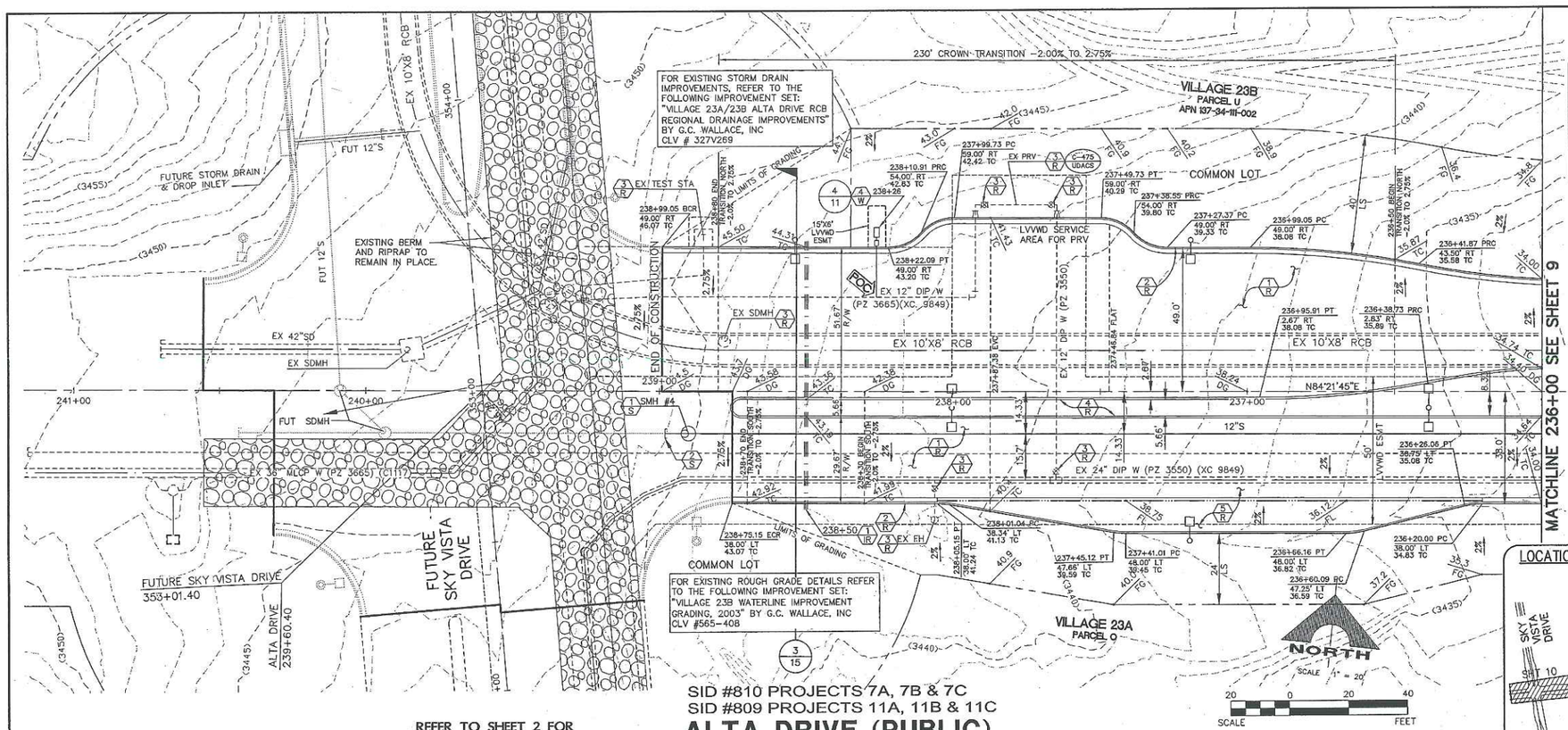
F:\Projects\600\620238-206\DWG\Production\206-C01.dwg hchas

THE HOWARD HUGHES COMPANY, LLC
VILLAGE 23A/23B ALTA DRIVE PHASE 2
COVER SHEET

DRAWING
1
1 OF 18 SHTS

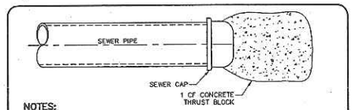
JOB NO. 620238-206

gc2426.dwg 060117.dwg



REDUCED PRESSURE PRINCIPLE ASSEMBLY (1) 1 1/2"

APPROVED REDUCED PRESSURE PRINCIPLE ASSEMBY(S) SHALL BE INSTALLED PER THE UDACS PLATE NO. 8. NO WATER SHALL BE TAKEN FROM A SERVICE REQUIRING BACKFLOW PREVENTION UNTIL THE REDUCED PRESSURE PRINCIPLE ASSEMBLY HAS BEEN SUCCESSFULLY TESTED BY THE LVVWD. ANY BLOCK WALL OR OTHER FENCE MATERIAL SHALL BE DESIGNED AND CONSTRUCTED AROUND THE OUTSIDE OF THE EASEMENT(S) TO ALLOW THE DISTRICT DIRECT ACCESS FROM THE ADJACENT RIGHT-OF-WAY. EASEMENTS SHALL BE CLEARLY MARKED OR STAKED PRIOR TO THE START OF CONSTRUCTION.

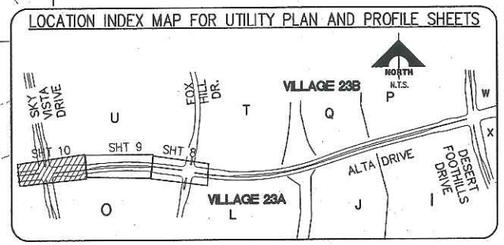


NOTES:

1. CONCRETE TO CONFORM WITH SECTION 4.11.2 OF THE LATEST VERSION OF THE DCS/WCS.

SEWER STUB AND CAP WITH THRUST BLOCK
SCALE: N.T.S.

LOCATION INDEX MAP FOR UTILITY PLAN AND PROFILE SHEETS

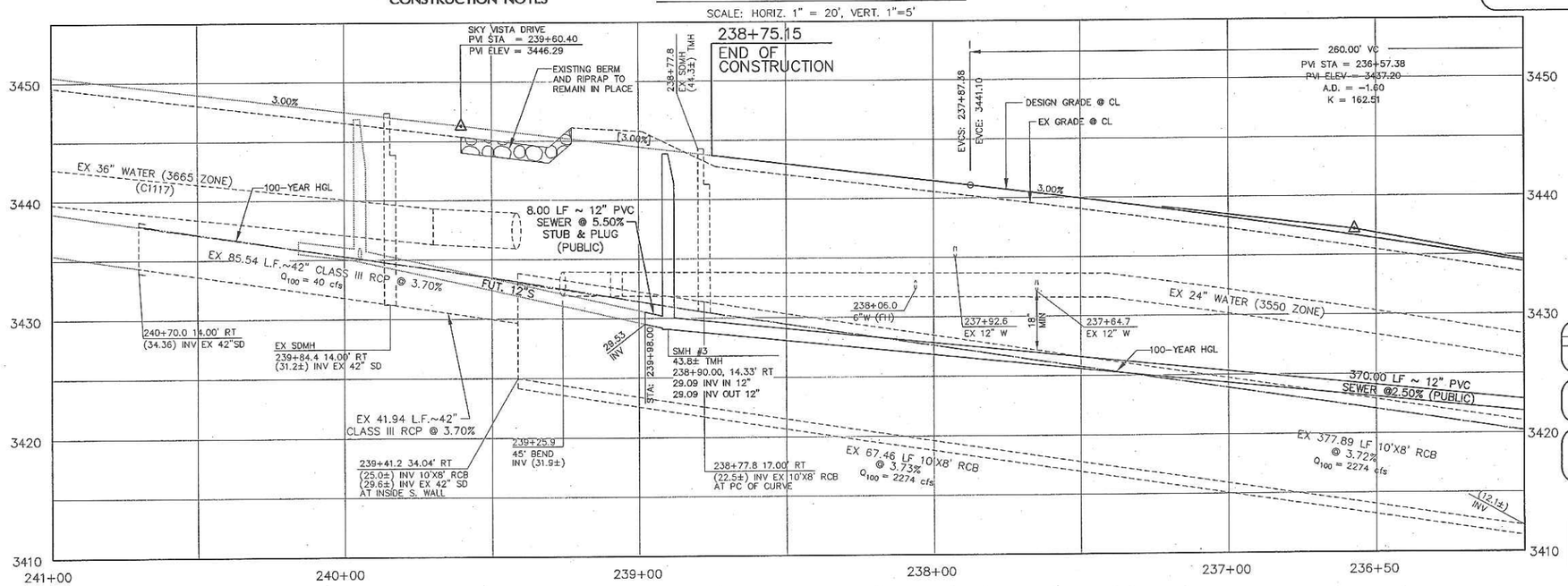


SID #810 PROJECTS 7A, 7B & 7C
SID #809 PROJECTS 11A, 11B & 11C

ALTA DRIVE (PUBLIC)

SCALE: HORIZ. 1" = 20', VERT. 1"=5'

REFER TO SHEET 2 FOR CONSTRUCTION NOTES



Call before you Dig
Avoid cutting underground utility lines. It's costly.
Call 811 or 1-800-227-2600

AVOID NITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

FAST
Call before you UnderGround.
1-702-432-5300
FREEWAY AND ARTERIAL SYSTEM OF TRANSPORTATION

BENCHMARK

BM #	DESCRIPTION	NAVD 88 DATUM	NAVD 88 DATUM
5LV09-34NE6	RIVET AND PLATE IN TOP OF CURB @ NORTHEAST CORNER OF DESERT FOOTHILLS AND ALTA DRIVE	3304.45 (FEET)	1007.197 (METERS)

NOTE

THIS SET OF DRAWINGS IS BASED UPON NAVD 88 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT ENGINEERING SERVICES MANAGER
PROJECT NO. 122081 DATE:

H #-
CLV #

DESIGN:
DRAWN:
CHECK:
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 08-08-13
PLOT TIME: 11:17:56

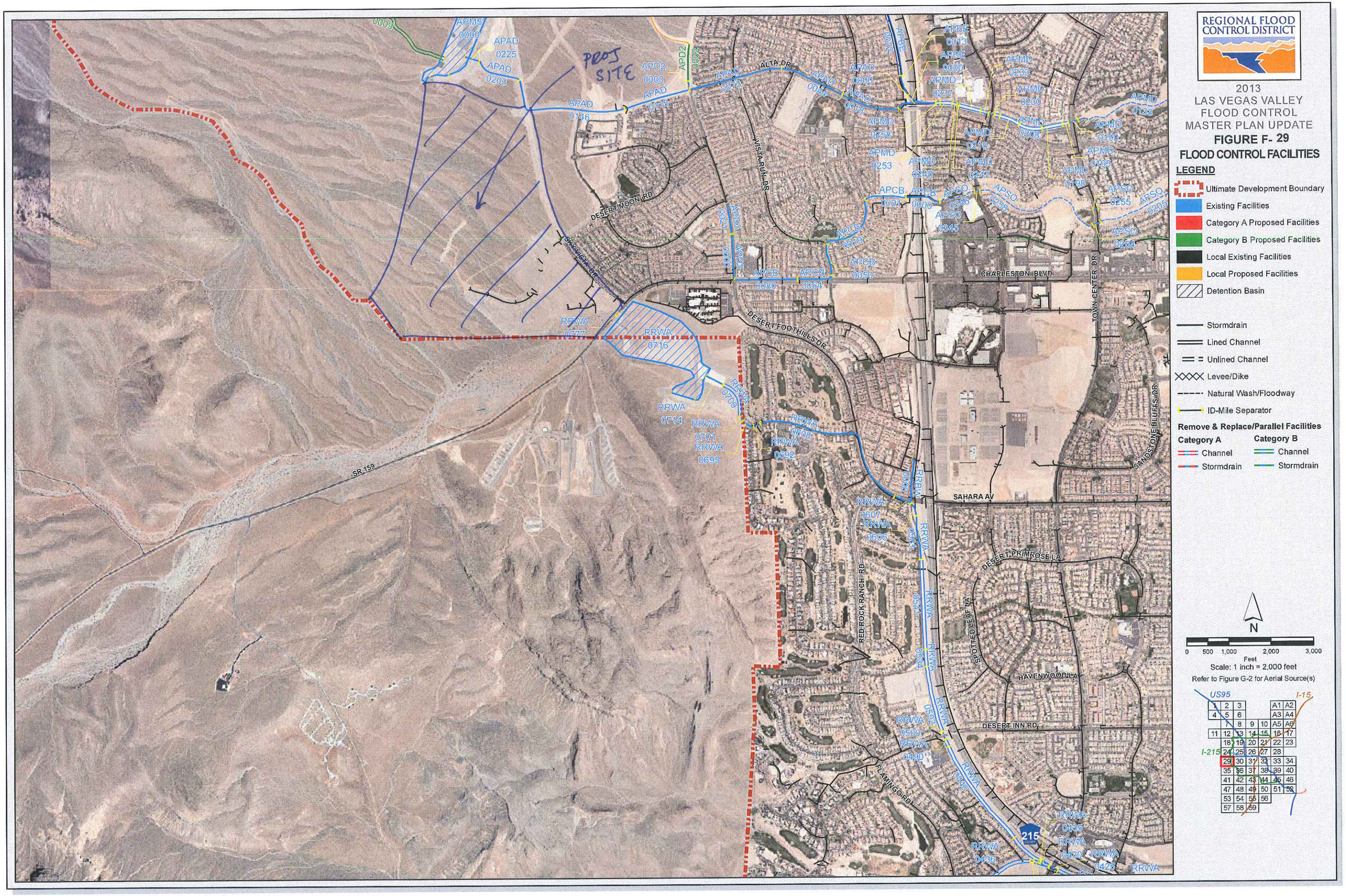
G.C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
1555 S. RAINBOW BOULEVARD · LAS VEGAS, NV 89146
T: 702.804.2000 · F: 702.804.2299 · GCWALLACE.COM

F:\Projects\600\620239-206\DWG\Production\206-C10.dwg hrivas

THE HOWARD HUGHES COMPANY, LLC
VILLAGE 23A/23B ALTA DRIVE PHASE 2
ALTA DRIVE UTILITY PLAN AND PROFILE
STA. 236+00 TO STA. 241+00

DRAWING
10
10 OF 18 SHTS

JOB NO. 62023B-206


REGIONAL FLOOD CONTROL DISTRICT
2013
LAS VEGAS VALLEY
FLOOD CONTROL
MASTER PLAN UPDATE
FIGURE F- 29
FLOOD CONTROL FACILITIES
LEGEND
Ultimate Development Boundary
Existing Facilities
Category A Proposed Facilities
Category B Proposed Facilities
Local Existing Facilities
Local Proposed Facilities
Detention Basin
Stormdrain
Lined Channel
Unlined Channel
Levee/Dike
Natural Wash/Floodway
ID-Mile Separator
Remove & Replace/Parallel Facilities
Category A
Channel
Stormdrain
Category B
Channel
Stormdrain
N
0 500 1,000 2,000 3,000
Feet
Scale: 1 inch = 2,000 feet
Refer to Figure G-2 for Aerial Source(s)
US95
I-15
I-215
PROJ SITE
ALTA DR
DESERT MOON RD
SKY VISTA DR
VISTA RUN DR
DESERT FOOTHILLS DR
CHARLESTON BLVD
TOWN CENTER DR
SANDSTONE BLUFFS DR
SAHARA AV
DESERT PRIMROSE LA
RED ROCK RANCH RD
SPOTTED LEAF LA
HAVENWOOD LA
DESERT INN RD
FLAMINGO RD
SR 159
215

ID / River Mile	Status	Facility Description	Length (ft.)	Flow (cfs)	HEC-1 Node	HEC-1 Model	Tributary Area (sq.mi.)	Channel Slope (%) **
APAD		ANGEL PARK - ALTA DRIVE BRANCH						
0000	E	2: 12' X 8' RCB	944	3140	CSWAA-3	ALLGOW4	8.26	6.00
0018	E	10' X 8' RCB	1392	3140	CSWAA-3	ALLGOW4	8.26	4.53
0044	E	11' X 8' RCAP	1565	3140	CSWAA-3	ALLGOW4	8.26	4.24
0073	E	11' X 8' RCAP	2220	2917	CSWAA-2	ALLGOW3	7.68	3.50
0115	E	10' X 8' RCB	1632	2917	CSWAA-2	ALLGOW3	7.68	2.20
0146	E	10' X 8' RCB	3010	2220	CSWAA-1	ALLGOW3	6.98	4.40
0203	E	2: 7' X 5.5' RCB	1136	2220	CSWAA-1	ALLGOW3	6.98	5.28
0225	E	2: 7' X 5.5' RCB Outlet	360	2149	SUM5DB	ALLGOW3	6.74	3.40
APBE		ANGEL PARK - BELTWAY BRANCH						
0000	E	3: 12' X 8' RCB	712	4060	CSWFH-9	ALLGOW3	2.65	0.82
0013	E	3: 12' X 8' RCB	489	4060	CSWFH-9	ALLGOW3	2.65	6.50
0022	E	Conc Chnl 20'W 7'D 2:1 SS	1556	4060	CSWFH-9	ALLGOW3	2.65	1.81
APCB		ANGEL PARK - CHARLESTON BLVD BRANCH						
0000	E	2: 10' X 6' RCB	833	1622	CSW18	ALLGOW3	1.35	1.54
0001	E	12' X 6' RCB	988	1622	CSW18	ALLGOW3	1.35	3.13
0019	E	11' X 6' RCB	1616	1196	CSW17	ALLGOW3	0.94	1.39
0050	E	8' X 7' RCB	757	1196	CSW17	ALLGOW3	0.94	1.00
0064	E	8' X 7' RCB	849	1196	CSW17	ALLGOW3	0.94	2.08
0080	E	7' X 7' RCB	1489	743	SW11	ALLGOW3	0.59	1.67
APD2		ANGEL PARK - DESERT FOOTHILLS 2 BRANCH						
0000	E	7' X 7' RCB	96	948	SWAA-2	ALLGOW3	0.70	3.62
0002	P0	7' X 7' RCB	964	948	SWAA-2	ALLGOW3	0.70	2.00
APD3		ANGEL PARK - DESERT FOOTHILLS 3 BRANCH						
0000	E	7' X 7' RCB	1090	743	SW11	ALLGOW3	0.59	1.67
0021	E	7' X 7' RCB	749	743	SW11	ALLGOW3	0.59	2.75
APM5		ANGEL PARK - MIDDLE 5 BRANCH						
0000	E	384 ac-ft Detention Basin #5		7001	SUM5IN	ALLGOW3	6.74	
0001	E	12,153 cfs PMF Spillway		12153	SUM5IN	ALLGOW3	6.74	
0009	P0	Conc Chnl 50'W 4.5'D 2:1 SS	4180	3624	CDB55-8	ALLGOW3	2.45	5.80
APMD		ANGEL PARK - MIDDLE BRANCH						
0133	E	Natural Wash	3015	6048	C11A-3*	ALLGOW4	11.31	3.00
0190	E	3: 12'X8' RCBC @ Town Center	236	6048	C11A-3	ALLGOW4	11.31	3.53
0195	E	Transition Structure	145	6048	C11A-3	ALLGOW4	11.31	3.59
0198	E	Conc Chnl 62'-68'W 5.5'-7.5'D 2:1 SS	500	6048	C11A-3	ALLGOW4	11.31	3.59
0208	E	Conc Chnl 62'-68'W 6.5'-7.5'D 2:1 SS	550	6048	C11A-3	ALLGOW4	11.31	2.81
0218	E	Conc Chnl 66'-69'W 6.5'-7.0'D 2:1 SS	500	6048	C11A-3	ALLGOW4	11.31	2.00
0227	E	Transition Structure	134	6048	C11A-3	ALLGOW4	11.31	2.00
0230	E	3: 12' X 8' RCBC @ Pavilion Center Dr	133	5889	C11A-1	ALLGOW4	11.12	2.00
0233	E	Transition Structure	207	5889	C11A-1	ALLGOW4	11.12	4.00
0237	E	Conc Chnl 76' W 6.5'-9.0'D 2:1 SS	516	5889	C11A-1	ALLGOW4	11.12	4.00
0247	E	3: 12' X 8' RCBC @ Access Rd	52	5889	C11A-1	ALLGOW4	11.12	4.00
0248	E	Transition Structure	128	5889	C11A-1	ALLGOW4	11.12	4.00
0253	E	Conc Chnl 76'W 6.5'D 2:1 SS	283	5889	C11A-1	ALLGOW4	11.12	4.00
0258	E	Transition Structure	100	5788	CRCSWFH9	ALLGOW4	10.91	0.82
APSO		ANGEL PARK - SOUTH BRANCH						
0205	E	Natural Wash	2380	2056	C12B	ALLGOW3	2.00	3.46
0254	E	2: 8' X 8' RCBC @ Town Center Dr.	190	1932	C12A	ALLGOW3	1.74	3.00
0255	E	24' X 12' RCAC @ Town Center Dr.	140	1932	C12A	ALLGOW3	1.74	3.00
0258	E	Natural Wash	3235	1932	C12A	ALLGOW3	1.74	1.36
0345	E	2: 8' X 8' RCBC @ Pavilion Center	120	1622	CSW18	ALLGOW3	1.35	2.00
0346	E	Natural Wash	880	1622	CSW18	ALLGOW3	1.35	1.40
RRBW		RED ROCK CHANNEL - BELTWAY LATERAL						
0000	E	6' X 6' RCB	1300	500	USACE	USACE	0.72	0.67
RRR4		R4 CHANNEL						
0000	E	Conc Chnl 16'W 10'D 0:1 SS	260	2400	USACE	USACE	7.08	3.15
0007	E	16' X 10' RCBC	80	2400	USACE	USACE	7.08	4.25
0008	E	Conc Chnl 16'W 7.5'D 0:1 SS	2200	2400	USACE	USACE	7.08	2.88
RRWA		RED ROCK CHANNEL						
0395	E	Conc Chnl 19'W 10'D 0:1 SS	1180	4800	USACE	USACE	4.61	1.75
0425	E	19' X 10' RCBC @ Town Center	230	4800	USACE	USACE	4.61	1.75

ID / River Mile	Status	Facility Description	Length (ft.)	Flow (cfs)	HEC-1 Node	HEC-1 Model	Tributary Area (sq.mi.)	Channel Slope (%) **
RRWA		RED ROCK CHANNEL						
0430	E	Conc Chnl 14'W 13'D 0:1 SS	230	2300	USACE	USACE	2.19	3.15
0435	E	14' X 10' RCBC	50	2300	USACE	USACE	2.19	3.15
0436	E	Conc Chnl 14'W 8'D 0:1 SS	800	2300	USACE	USACE	2.19	3.15
0440	E	Conc Chnl 10'W 7.5'D 2:1 SS	2660	2300	USACE	USACE	2.19	2.14
0490	E	Conc Chnl 13'W 10'D 0:1 SS	200	2300	USACE	USACE	2.19	1.00
0500	E	13' X 10' RCBC @ Desert Inn	190	1900	USACE	USACE	1.75	1.00
0502	E	Conc Chnl 10'W 7'D 2:1 SS	1580	1900	USACE	USACE	1.75	2.60
0534	E	Conc Chnl 16'W 7'D 0:1 SS	400	1500	USACE	USACE	1.07	1.24
0541	E	Conc Chnl 10'W 7'D 2:1 SS	2120	1500	USACE	USACE	1.07	0.80
0581	E	13' X 9' RCB	1040	1000	USACE	USACE	1.07	0.60
0606	E	10' X 9' RCB	450	750	USACE	USACE	0.72	0.60
0607	E	10' X 9' RCB	450	750	USACE	USACE	0.72	0.60
0608	E	96" RCP	4930	460	USACE	USACE	0.72	0.55
0692	E	96" CIPCP	195	180	USACE	USACE	0.19	1.40
0695	E	96" RCP	290	180	USACE	USACE	0.19	0.50
0701	E	72" RCP	125	180	USACE	USACE	54.74	0.50
0709	E	Riprap Chnl 10'W 6'D 2:1 SS	830	180	USACE	USACE	54.74	0.80
0714	E	2.25' X 2.25' RCBC Outlet	445	180	USACE	USACE	54.74	
0715	E	110,000 cfs PMF Spillway		110000	USACE	USACE	54.74	
0716	E	2,007 ac-ft Red Rock Detention Basin		12800	USACE	USACE	54.74	
0777	E	2 Span Bridge 200'W 17'D @ SR 159	50	1998	CRD3	FLAM3A	1.24	2.50

** The HEC-1 node shown identifies the controlling concentration point for the associated facility and is located upstream of this facility due to decreasing peak flow with increasing tributary area caused by storm distribution transitions, depth area reduction factors, or attenuation of flow from routing.*

*** As-built or design slopes were used when available. All other slopes are based on existing topography. The user should verify the facility slope listed prior to performing any facility specific analysis.*

^ For parallel facilities, the existing facility flow equals its normal depth capacity, and the proposed parallel facility flow equals the remaining flow (i.e., HEC-1 Node flow = existing facility normal depth capacity + proposed parallel facility flow).

USACE - Refer to "Las Vegas Wash & Tributaries (Tropicana and Flamingo Washes) Hydrologic Basis for Design" prepared by U.S. Army Corps of Engineers, Los Angeles District, June 1993. See Figure S-6 for USACE Boundary.

REGIONAL FLOOD CONTROL DISTRICT

2013 LAS VEGAS VALLEY FLOOD CONTROL MASTER PLAN UPDATE

FACILITY INVENTORY FIGURE F - 29

LEGEND

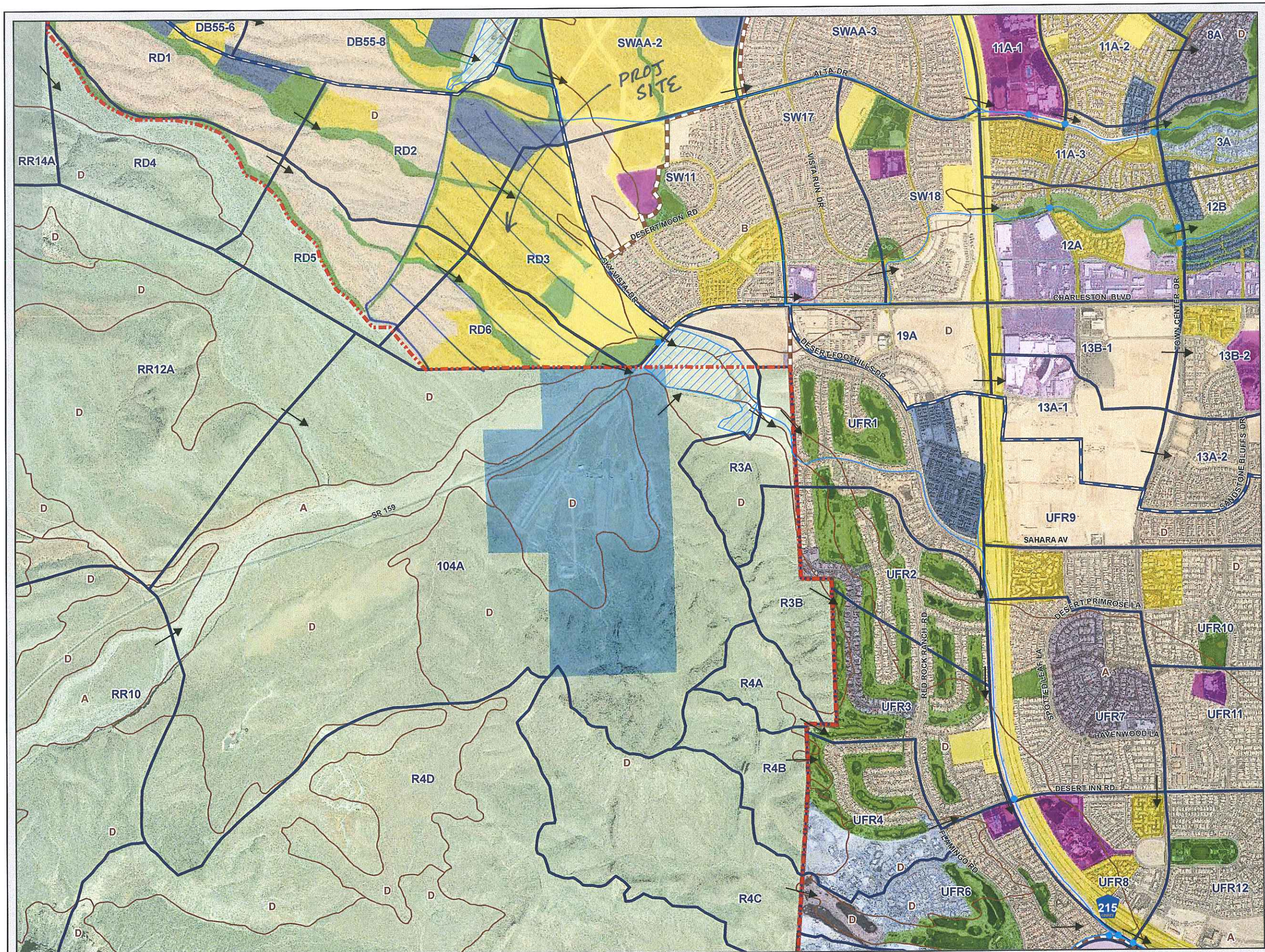
ID (Facility Identifier) AABB
Parent Stream Name
Stream Name
River Mile 0000
Distance Above Confluence with Parent Stream (Miles)
Miles in Hundredths

Existing Facility..... E
Proposed or Modified Facility..... P
Contingency Level
Category B..... P0
Master Plan..... P1
Preliminary Design..... P2
Design..... P3

Bottom Width..... W
Depth..... D
Side Slope, H:V..... SS

Construction Features

Cast in Place Concrete Pipe..... CIPCP
Corrugated Metal Arch Pipe Culvert..... CMAP
Corrugated Metal Pipe Culvert..... CMPC
High Density Polyethylene..... HDPE
Horizontal Elliptical Reinforced Concrete Pipe..... HERCP
Reinforced Concrete Arch Pipe..... RCAP
Reinforced Concrete Arch Culvert..... RCAC
Reinforced Concrete Box..... RCB
Reinforced Concrete Box Culvert..... RCBC
Reinforced Concrete Pipe..... RCP
Reinforced Concrete Pipe Culvert..... RCPC
Storm Sewer Pipe..... SSP



REGIONAL FLOOD CONTROL DISTRICT

2008
LAS VEGAS VALLEY
FLOOD CONTROL
MASTER PLAN UPDATE

FIGURE H- 29
HYDROLOGIC SUMMARY

LEGEND

- Ultimate Development Boundary
- ID Watershed Boundary
- Subbasin Boundary
- Drought Ordinance Boundary
- Flow Arrows

Flood Control Facilities

- Existing Facilities
- Category A Proposed Facilities
- Category B Proposed Facilities
- Category A Remove & Replace/ Parallel Facilities
- Category B Remove & Replace/ Parallel Facilities

Type Hydrologic Soil Groups

- A Low Runoff Potential
- B Moderately Low Runoff Potential
- C Moderately High Runoff Potential
- D High Runoff Potential/Rock Outcrops

Typical Land Use

1	Undeveloped Land, Open Desert
2	Parks, Golf Courses
3	Rural
4 / 14*	Low Density Residential
5 / 15*	Medium Density Residential
6 / 16*	High Density Residential
7 / 17*	Public Facility, Residential
8 / 18*	Very High Density Residential
9 / 19*	Commerical, Retail, Casino, High Rise Condominiums
10 / 20*	Light Industrial
11 / 21*	Heavy Industrial
12 / 22*	Schools
13	Lakes

* Drought Ordinance Applied

N

0 500 1,000 2,000 3,000
Feet

Scale: 1 inch = 2,000 feet

Refer to Figure G-2 for Aerial Source(s)

US95 I-15 I-215

PBS&J PB

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

TIME OF CONCENTRATION

Parsons Brinckerhoff
File: FORM4.XLS

Las Vegas Valley Master Plan Update
Flamingo/Tropicana Watershed
Ultimate Conditions

BY: JR
DATE: 6/10/14

SUB-BASIN DATA						INITIAL / OVERLAND TIME (Ti)			TRAVEL TIME (Tt)					Tc	Tc Check	Tlag	REMARKS
DESIG: (1)	DEV./EX. (D or E)	CN	K (2)	AREA Ac (3)	AREA Mi^2	INITIAL LENGTH Feet (4)	SLOPE % (5)	Ti Min (6)	TRAVEL LENGTH Feet (7)	SLOPE % (8)	V1 VELOCITY FPS (9a)	V2 VELOCITY FPS (9b)	Tt Min (10)	Min (13)	Min (14)	Tlag= 0.6Tc/60 Hours	RAINFALL Q100 Inches
RD1	D	88.8	0.7821	247	0.386	100	1.0	5.7	6544	7.8	5.6	8.6	13.3	19.0	46.9	**0.190**	3.51
RD2	D	91.3	0.8153	334	0.522	100	1.0	5.1	5089	6.4	5.1	7.7	11.5	16.6	38.8	**0.166**	3.42
RD3	D	89.5	0.7912	211	0.330	100	1.0	5.6	4488	5.1	4.6	6.9	11.4	17.0	35.5	**0.170**	3.36
RD4	D	86.3	0.7494	263	0.411	100	1.0	6.3	5532	8.1	5.8	8.7	11.1	17.4	41.3	**0.174**	3.49
RD5	D	88.6	0.7794	237	0.370	100	1.0	5.8	4502	6.7	5.2	7.9	10.0	15.8	35.6	**0.158**	3.42
RD6	D	90.2	0.8013	160	0.250	100	1.0	5.4	4384	5.7	4.8	7.3	10.6	16.0	34.9	**0.160**	3.36

Tc = Ti + Tt Tlag = 0.6 Tc
Ti = 1.8 (1.1 - K) L^1/2 / S^1/3
K = 0.0132 (CN) - 0.39
Tc Check = L/180+10

For the travel time (Tt) calculations,
V1 applies to the first 500 feet of travel distance;
V2 applies to the remaining travel distance.

Existing V1 = 14.8*(S/100)^1/2 Developed V1 = 20.2*(S/100)^1/2
Existing V2 = 29.4*(S/100)^1/2 Developed V2 = 30.6*(S/100)^1/2

REFERENCE :

STANDARD FORM 4

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JAN  1997               *
*            VERSION 4.1               *
*                                      *
*  RUN DATE   18JUN08  TIME  09:30:55  *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
```

```
X     X  XXXXXXX   XXXXX           X
X     X  X        X     X         XX
X     X  X        X                X
XXXXXXX  XXXX     X        XXXXX   X
X     X  X        X                X
X     X  X        X     X          X
X     X  XXXXXXX   XXXXX          XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM


```
          LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

                        *DIAGRAM
*** FREE ***
               1        ID     CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT 2008 MASTER PLAN UPDATE
               2        ID     FLAMINGO / TROPICANA WASHES WATERSHED
               3        ID     RECOMMENDED DRAINAGE SYSTEM WITH ULTIMATE DEVELOPMENT
               4        ID     INPUT FILE = FLAM3A.DAT
               5        ID     INPUT FILE DATE = JUNE 2008
               6        ID     DESIGN STORM = 100-YEAR, 6-HOUR STORM
               7        ID     STORM DISTRIBUTION = SDN3
               8        ID     STORM CENTERING = SERIES A: REGIONAL DETENTION BASIN FLOWS NOT DIVERTED OUT
               9        ID     MODELED BY PARSONS BRINCKERHOFF
              10        ID     DO NOT USE THIS MODEL TO DETERMINE FLOWRATES OR VOLUMES FOR USACE
              11        ID     FACILITIES UPSTREAM OF AND INCLUDING TROPICANA DETENTION BASIN
              12        ID     USACE INFLOW HYDROGRAPH INPUT FOR TROPICANA DETENTION BASIN TO MODEL
              13        ID     WATERSHED DOWNSTREAM OF TROPICANA DETENTION BASIN
              14        ID     USACOE SUBBASINS LU CARDS HAVE BEEN REPLACED BY LS CARDS IN THIS MODEL
              15        ID     TO COMPLY WITH CCRFCD HYDROLOGIC CRITERIA
              16        ID     DIVERT COMMANDS INSERTED FOR FLOWS IN EXCESS OF DESIGN DISCHARGE FOR
              17        ID     ALL USACE DETENTION AND DEBRIS BASINS UPSTREAM OF TROPICANA DB
              18        ID     INSERTED OFFLINE TROPICANA MCCARRAN DETENTION BASIN W/OUTFALL TO SWENSON
              19        ID
              20        ID     JR CARDS CONTAIN DARFS BASED ON THE FOLLOWING VALUES:
              21        ID
              22        ID     AREA (SQUARE MILES)    DARF
              23        ID
              24        ID    0-0.5   0.99
              25        ID    0.5-1.0   0.975
              26        ID    1.0-2.0   0.95
              27        ID    2.0-3.0   0.925
              28        ID    3.0-4.0   0.915
              29        ID    4.0-5.0   0.908
              30        ID    5.0-6.0   0.903
              31        ID    6.0-7.0   0.895
              32        ID    7.0-8.0   0.885
              33        ID
              34        IT       5       0       0     300
              35        IO       5       0       0
              36        IN       5       0       0
              37        JR    PREC    0.99   0.975    0.95   0.925   0.915   0.908   0.903   0.895   0.885
                        *
              38        KK     RR1
              39        BA   4.225
              40        PB    4.16
              41        PC       0    0.02   0.057    0.07   0.087   0.108   0.124    0.13    0.13    0.13
              42        PC    0.13    0.13    0.13   0.133    0.14   0.142   0.148   0.158   0.172   0.181
              43        PC    0.19   0.197   0.199     0.2   0.201   0.204   0.214   0.229   0.241   0.249
              44        PC   0.251   0.256    0.27   0.278   0.281   0.283   0.295   0.322   0.352   0.409
              45        PC   0.499    0.59    0.71   0.744   0.781   0.812   0.819   0.835   0.851   0.856
              46        PC    0.86   0.868   0.876   0.888    0.91   0.926   0.937    0.95    0.97   0.976
              47        PC   0.982   0.985   0.987   0.989    0.99   0.993   0.993   0.994   0.995   0.998
              48        PC   0.998   0.999       1
              49        LS       0    86.2
              50        UD   0.443
                        *
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  51          KK     RR2
  52          BA   3.547
  53          PB    4.18
  54          LS       0     87.3
  55          UD   0.545
              *

  56          KK    RRR2
  57          KM   MUSKINGUM ROUTING UNSTABLE - USED MUSKINGUM-CUNGE
  58          KM   NATURAL WASH
  59          RD    1700   0.076    0.04       0    TRAP     100       2
              *

  60          KK    CRR2
  61          KM   COMBINE RR1 AND RR2
  62          HC       2
              *

  63          KK   RCRR2
  64          KM   ROUTE CRR2 THROUGH RR3 TO CRR3
  65          KM   NATURAL WASH
  66          KM   TRAVEL LENGTH = 15,850
  67          KM   SLOPE = 4.3%
  68          KM   N = 0.040
  69          KM   HYDRAULIC RADIUS = 1.5
  70          KM   VELOCITY = 16.2
  71          RM       3   0.272    0.15
              *

  72          KK     RR5
  73          BA   7.132
  74          PB    3.91
  75          LS       0     88.3
  76          UD   0.615
              *

  77          KK   R-RR5
  78          KM   ROUTE RR5 THROUGH RR3 TO CRR3
  79          KM   NATURAL WASH
  80          KM   TRAVEL LENGTH = 10,700
  81          KM   SLOPE = 3.7%
  82          KM   N = 0.040
  83          KM   HYDRAULIC RADIUS = 1.5
  84          KM   VELOCITY = 15.0
  85          RM       2   0.198    0.15
              *

  86          KK     RR3
  87          BA  14.983
  88          PB    3.82
  89          LS       0     87.9
  90          UD   0.761
              *
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  91          KK    CRR3
  92          KM   COMBINE CRR2, RR5, AND RR3
  93          HC       3
              *

  94          KK   RCRR3
  95          KM   ROUTE CRR3 THROUGH RR10 TO CRR10
  96          KM   NATURAL WASH
  97          KM   TRAVEL LENGTH = 20,700
  98          KM   SLOPE = 2.5%
  99          KM   N = 0.040
 100          KM   HYDRAULIC RADIUS = 1.5
 101          KM   VELOCITY = 12.3
 102          RM       6   0.466    0.15
              *

 103          KK    RR10
 104          BA   8.775
 105          PB    3.44
 106          LS       0     86.7
 107          UD   0.882
              *

 108          KK   CRR10
 109          KM   COMBINE CRR3 AND RR10
 110          HC       2
              *

 111          KK  RCRR10
 112          KM   ROUTE CRR10 THROUGH 104A TO C104A (RED ROCK DETENTION BASIN)
 113          KM   NATURAL WASH
 114          KM   TRAVEL LENGTH = 14,500
 115          KM   SLOPE = 2.1%
 116          KM   N = 0.040
```

```
 117          KM   HYDRAULIC RADIUS = 1.5
 118          KM   VELOCITY = 11.3
 119          RM       4   0.356    0.15
              *

 120          KK   RR12A
 121          BA   5.821
 122          PB    3.53
 123          LS       0    88.1
 124          UD   0.728
              *

 125          KK R-RR12A
 126          KM   ROUTE RR12A THROUGH 104A TO C104A (RED ROCK DETENTION BASIN)
 127          KM   NATURAL WASH
 128          KM   TRAVEL LENGTH = 12,000
 129          KM   SLOPE = 2.6%
 130          KM   N = 0.040
 131          KM   HYDRAULIC RADIUS = 1.5
 132          KM   VELOCITY = 12.6
1                                    HEC-1 INPUT                                    PAGE  4

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 133          RM       3   0.265    0.15
              *

 134          KK    104A
 135          BA   3.391
 136          PB    3.34
 137          LS       0    84.3
 138          UD   0.801
              *

 139          KK   C104A
 140          KM   COMBINE CRR10, RR12A, AND 104A
 141          HC       3
              *

 142          KK     RD1
 143          BA   0.386
 144          PB    3.51
 145          LS       0    88.8
 146          UD   0.190
              *

 147          KK   R-RD1
 148          KM   ROUTE RD1 THROUGH RD2 TO CRD2
 149          KM   FUTURE CONCRETE CHANNEL
 150          RD    5100   0.061   0.015       0    TRAP      12       2
              *

 151          KK     RD2
 152          BA   0.522
 153          PB    3.42
 154          LS       0    91.3
 155          UD   0.166
              *

 156          KK    CRD2
 157          KM   COMBINE RD1 AND RD2
 158          HC       2
              *

 159          KK   RCRD2
 160          KM   ROUTE CRD2 TO CRD3 (RED ROCK DETENTION BASIN)
 161          KM   FUTURE CONCRETE CHANNEL
 162          RD    4600    0.05   0.015       0    TRAP      12       2
              *

 163          KK     RD3
 164          BA   0.330
 165          PB    3.36
 166          LS       0    89.5
 167          UD   0.170
              *
1                                    HEC-1 INPUT                                    PAGE  5

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 168          KK    CRD3
 169          KM   COMBINE CRD2 AND RD3
 170          HC       2
              *

 171          KK   RR14A
 172          BA   4.601
 173          PB    3.75
 174          LS       0    87.9
 175          UD   0.725
              *

 176          KK R-RR14A
 177          KM   ROUTE RR14A THROUGH RD4 TO CRD4
```

```
KM   FUTURE CONCRETE CHANNEL
RD    5500   0.071   0.015       0    TRAP      12       2
*

KK     RD4
BA   0.411
PB    3.49
LS       0    86.3
UD   0.174
*

KK    CRD4
KM   COMBINE RR14A AND RD4
HC       2
*

KK   RCRD4
KM   ROUTE CRD4 THROUGH RD5 TO CRD5
KM   FUTURE CONCRETE CHANNEL
RD    4550   0.067   0.015       0    TRAP      20       2
*

KK     RD5
BA   0.370
PB    3.42
LS       0    88.6
UD   0.158
*

KK    CRD5
KM   COMBINE CRD4 AND RD5
HC       2
*

KK   RCRD5
KM   ROUTE CRD5 THROUGH RD6 TO CRD6 (RED ROCK DETENTION BASIN)
KM   FUTURE CONCRETE CHANNEL
RD    5600   0.047   0.015       0    TRAP      20       2
*
```



```
LINE  ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

KK     RD6
BA   0.250
PB    3.36
LS       0    90.2
UD   0.160
*

KK    CRD6
KM   COMBINE CRD5 AND RD6
HC       2
*

KK    INRR
KM   COMBINE C104A, CRD3, AND CRD6 - TOTAL INFLOW TO RED ROCK DETENTION BASIN
KO       3
HC       3
* ============================================================

KK    RRDB
KM   RED ROCK DETENTION BASIN
KM   TAKEN FROM THE CORP MODELS FOR RED ROCK DETENTION BASIN
KM   100YR COMPUTED PROBABILITY DETENTION DESIGN
KM   FACILITY ID-MILE = RRWA 0716
KM   STORAGE VOLUME = 2007 ACRE-FEET
KM   OUTLET = 27"H x 27"W RCB ORIFICE
KM   100-YR DISCHARGE = 182 CFS
KM   SPILLWAY LENGTH = 600 FT
KM   AUXILLARY OGEE SPILLWAY LENGTH = 323 FT
KM   SPILLWAY CREST ELEVATION = 3212.5 FT NGVD
KM   PMF DISCHARGE = 110,000 CFS
KM   TOP OF DAM ELEVATION = 3225 FT NGVD
KO       3
RS       1    STOR      -1
SV       0    9.00  107.00  231.00  372.00  529.00  705.00  903.00 1125.00 1376.00
SV 1659.00 1974.00 2007.00 2115.00 2331.00 2690.00 2933.00
SQ       0      10      57      80      99     114     128     140     151     162
SQ     171     181     182    8654   33270  110918  163477
SE    3161    3162    3167    3172    3177    3182    3187    3192    3197    3202
SE    3207    3212  3212.5    3214    3217    3222    3225
* ============================================================

KK *DOUTRR
KM   DIVERT SPILLWAY OVERFLOW IN EXCESS OF CORPS DESIGN OUTFLOW
DT*D-RROUT
DI       0     182    3000    5000   10000
DQ       0       0    2818    4818    9818
*

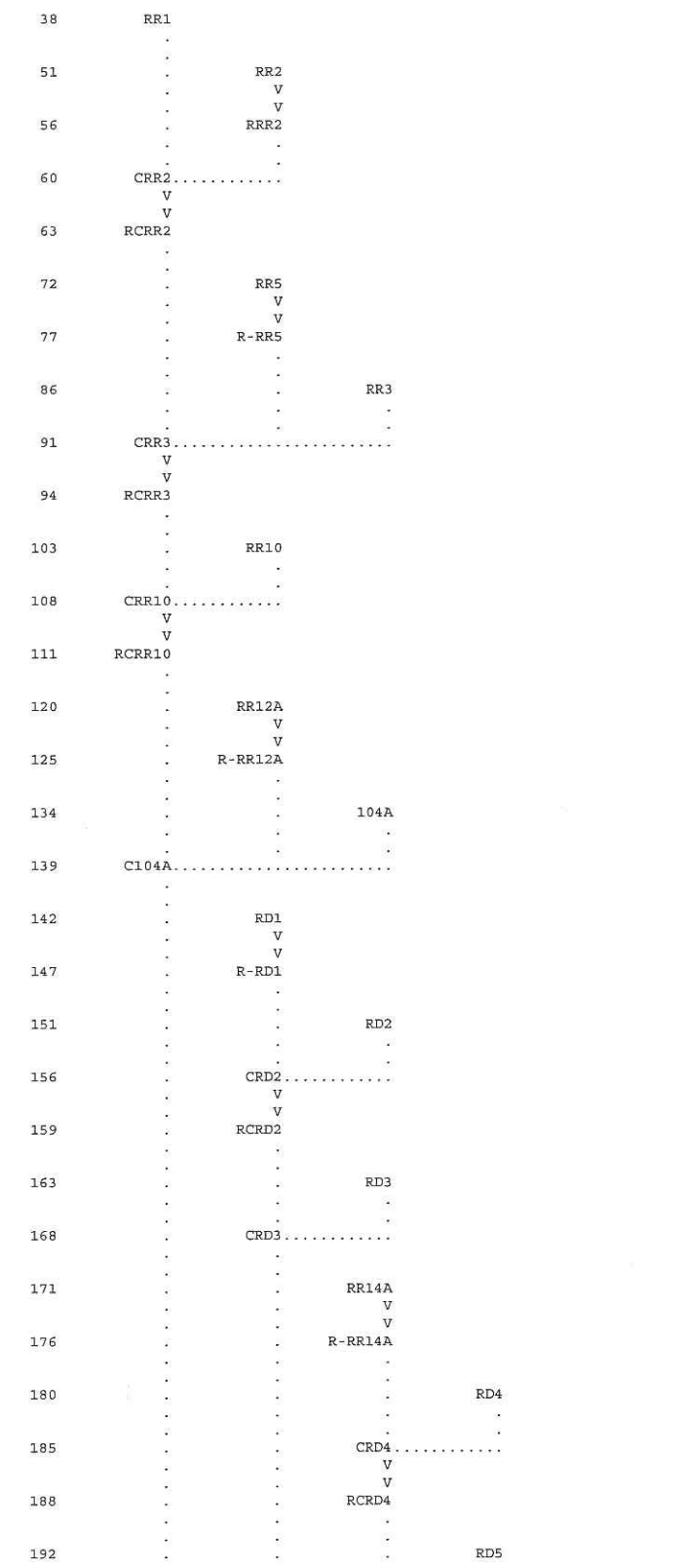
KK  ROUTRR
KM   ROUTE OUTFLOW FROM RED ROCK DETENTION BASIN THROUGH R3A TO CR3A
KM   FACILITY = RED ROCK CHANNEL
```

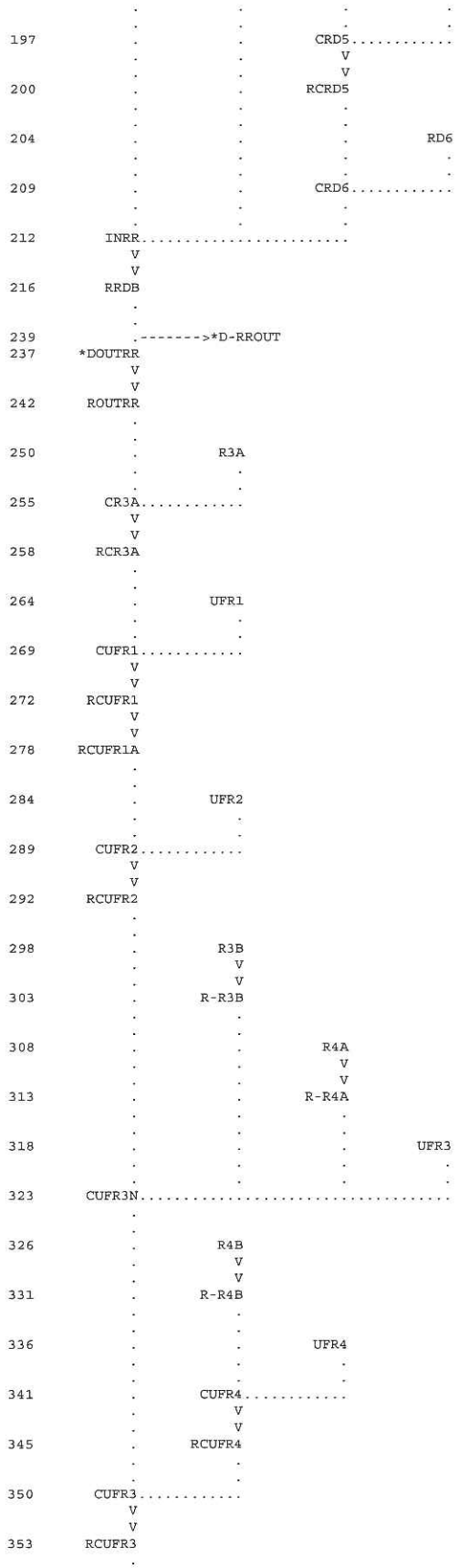
1

SCHEMATIC DIAGRAM OF STREAM NETWORK

INPUT LINE NO.

(V) ROUTING
(.) CONNECTOR
(---->) DIVERSION OR PUMP FLOW
(<----) RETURN OF DIVERTED OR PUMPED FLOW




197 CRD5
200 RCRD5
204 RD6
209 CRD6
212 INRR
216 RRDB
239 *D-RROUT
237 *DOUTRR
242 ROUTRR
250 R3A
255 CR3A
258 RCR3A
264 UFR1
269 CUFR1
272 RCUFR1
278 RCUFR1A
284 UFR2
289 CUFR2
292 RCUFR2
298 R3B
303 R-R3B
308 R4A
313 R-R4A
318 UFR3
323 CUFR3N
326 R4B
331 R-R4B
336 UFR4
341 CUFR4
345 RCUFR4
350 CUFR3
353 RCUFR3

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
244.	5.83	161.	43.	41.	41.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2253.21	5.83	2249.64	2240.24	2240.01	2240.01

CUMULATIVE AREA = 12.56 SQ MI

1

PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN		RATIOS APPLIED TO PRECIPITATION RATIO 1 .99	RATIO 2 .98	RATIO 3 .95	RATIO 4 .93	RATIO 5 .92	RATIO 6 .91	RATIO 7 .90	RATIO 8 .89	RATIO 9 .88
HYDROGRAPH AT													
+	RR1	4.22	1	FLOW	5782.	5663.	5468.	5274.	5196.	5142.	5104.	5042.	4964.
				TIME	3.83	3.83	3.92	3.92	3.92	3.92	3.92	3.92	3.92
HYDROGRAPH AT													
+	RR2	3.55	1	FLOW	4503.	4414.	4267.	4119.	4060.	4018.	3989.	3942.	3883.
				TIME	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
ROUTED TO													
+	RRR2	3.55	1	FLOW	4493.	4401.	4252.	4107.	4048.	4003.	3976.	3930.	3870.
				TIME	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
2 COMBINED AT													
+	CRR2	7.77	1	FLOW	10163.	9961.	9616.	9276.	9140.	9044.	8979.	8867.	8731.
				TIME	3.92	3.92	3.92	3.92	3.92	3.92	3.92	3.92	3.92
ROUTED TO													
+	RCRR2	7.77	1	FLOW	9457.	9266.	8946.	8627.	8500.	8411.	8347.	8245.	8118.
				TIME	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17
HYDROGRAPH AT													
+	RR5	7.13	1	FLOW	7918.	7763.	7505.	7247.	7144.	7072.	7020.	6938.	6835.
				TIME	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08
ROUTED TO													
+	R-RR5	7.13	1	FLOW	7629.	7479.	7229.	6979.	6880.	6810.	6760.	6680.	6580.
				TIME	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25
HYDROGRAPH AT													
+	RR3	14.98	1	FLOW	13892.	13612.	13146.	12681.	12496.	12366.	12273.	12124.	11939.
				TIME	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17
3 COMBINED AT													
+	CRR3	29.89	1	FLOW	30929.	30313.	29288.	28265.	27855.	27569.	27365.	27038.	26629.
				TIME	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25
ROUTED TO													
+	RCRR3	29.89	1	FLOW	29051.	28469.	27499.	26530.	26143.	25872.	25678.	25369.	24982.
				TIME	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67
HYDROGRAPH AT													
+	RR10	8.77	1	FLOW	6139.	6007.	5788.	5570.	5482.	5421.	5378.	5308.	5221.
				TIME	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33
2 COMBINED AT													
+	CRR10	38.66	1	FLOW	34399.	33705.	32551.	31397.	30936.	30614.	30384.	30015.	29555.
				TIME	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67
ROUTED TO													
+	RCRR10	38.66	1	FLOW	32905.	32239.	31130.	30023.	29581.	29271.	29050.	28697.	28255.
				TIME	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
HYDROGRAPH AT													
+	RR12A	5.82	1	FLOW	5048.	4945.	4773.	4602.	4534.	4486.	4452.	4397.	4329.
				TIME	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17
ROUTED TO													
+	R-RR12A	5.82	1	FLOW	4857.	4758.	4592.	4427.	4361.	4315.	4282.	4229.	4163.
				TIME	4.42	4.42	4.42	4.42	4.42	4.42	4.42	4.42	4.42
HYDROGRAPH AT													
+	104A	3.39	1	FLOW	2217.	2166.	2080.	1995.	1961.	1938.	1921.	1894.	1860.
				TIME	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25
3 COMBINED AT													
+	C104A	47.87	1	FLOW	37387.	36632.	35374.	34118.	33616.	33265.	33015.	32614.	32113.
				TIME	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
HYDROGRAPH AT													
+	RD1	.39	1	FLOW	671.	658.	636.	613.	604.	598.	594.	587.	578.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58

ROUTED TO													
+	R-RD1	.39	1	FLOW	662.	643.	621.	600.	593.	591.	585.	574.	570.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT													
+	RD2	.52	1	FLOW	1002.	983.	953.	922.	909.	901.	895.	885.	872.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT													
+	CRD2	.91	1	FLOW	1625.	1589.	1537.	1486.	1464.	1452.	1443.	1423.	1402.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
ROUTED TO													
+	RCRD2	.91	1	FLOW	1566.	1535.	1484.	1433.	1421.	1409.	1394.	1380.	1359.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT													
+	RD3	.33	1	FLOW	582.	571.	552.	533.	525.	520.	516.	510.	502.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT													
+	CRD3	1.24	1	FLOW	2114.	2067.	1998.	1931.	1903.	1883.	1872.	1849.	1819.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT													
+	RR14A	4.60	1	FLOW	4311.	4224.	4079.	3935.	3877.	3837.	3808.	3762.	3704.
				TIME	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17
ROUTED TO													
+	R-RR14A	4.60	1	FLOW	4290.	4203.	4058.	3915.	3858.	3816.	3788.	3741.	3685.
				TIME	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17
HYDROGRAPH AT													
+	RD4	.41	1	FLOW	680.	666.	641.	617.	608.	601.	596.	589.	579.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT													
+	CRD4	5.01	1	FLOW	4421.	4332.	4182.	4035.	3976.	3933.	3905.	3856.	3798.
				TIME	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17
ROUTED TO													
+	RCRD4	5.01	1	FLOW	4404.	4317.	4168.	4019.	3961.	3916.	3889.	3841.	3781.
				TIME	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17
HYDROGRAPH AT													
+	RD5	.37	1	FLOW	665.	652.	629.	607.	599.	592.	588.	581.	572.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT													
+	CRD5	5.38	1	FLOW	4513.	4424.	4272.	4120.	4060.	4014.	3987.	3937.	3877.
				TIME	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17
ROUTED TO													
+	RCRD5	5.38	1	FLOW	4491.	4402.	4251.	4097.	4039.	3993.	3966.	3914.	3856.
				TIME	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17
HYDROGRAPH AT													
+	RD6	.25	1	FLOW	459.	450.	436.	421.	415.	411.	408.	404.	398.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT													
+	CRD6	5.63	1	FLOW	4566.	4476.	4323.	4167.	4108.	4061.	4034.	3981.	3922.
				TIME	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17
3 COMBINED AT													
+	INRR	54.74	1	FLOW	40356.	39548.	38200.	36855.	36317.	35941.	35673.	35242.	34704.
				TIME	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
ROUTED TO													
+	RRDB	54.74	1	FLOW	40090.	39233.	37866.	36432.	35820.	35382.	35028.	34240.	33569.
				TIME	5.00	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.17
			** PEAK STAGES IN FEET **										
			1	STAGE	3217.44	3217.38	3217.30	3217.20	3217.16	3217.14	3217.11	3217.06	3217.02
				TIME	5.00	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.17
DIVERSION TO													
+	*D-RROUT	54.74	1	FLOW	39908.	39051.	37684.	36250.	35638.	35200.	34846.	34058.	33387.
				TIME	5.00	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.17
HYDROGRAPH AT													
+	*DOUTRR	54.74	1	FLOW	182.	182.	182.	182.	182.	182.	182.	182.	182.
				TIME	5.50	4.67	4.67	4.67	4.75	5.58	4.75	5.42	4.75
ROUTED TO													
+	ROUTRR	54.74	1	FLOW	182.	182.	182.	182.	182.	182.	182.	182.	182.
				TIME	4.67	5.00	4.75	4.75	5.08	5.58	4.83	4.83	4.83
HYDROGRAPH AT													
+	R3A	.19	1	FLOW	299.	292.	281.	270.	266.	263.	260.	257.	253.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.58	3.58
2 COMBINED AT													
+	CR3A	54.93	1	FLOW	403.	395.	382.	368.	363.	359.	356.	352.	346.

RESPONSE TO COMMENTS
ON THE
TECHNICAL DRAINAGE STUDY
FOR
CLARK COUNTY
DESIGN ENGINEERING SERVICES'
COMMENTS ON THE
2006 SUMMERLIN WEST PLANNING AREA
FLOOD CONTROL MASTER PLAN UPDATE

62A.W04.007

March 2007

Prepared For:

Howard Hughes Corporation
10000 West Charleston Boulevard; Ste. 200
Las Vegas, Nevada 89135
Phone: (702) 791-4300
Fax: (702) 791-4453

G. C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: April 13, 2007
TO: Land Development Services Department of Public Works				FROM: Oh Sang Kwon, P.E. Flood Control Department of Public Works
SUBJECT:	Drainage Study for:			COPIES TO:
Master Summerlin West Planning Area				G.C. Wallace, Inc.
Cross Streets:	Charleston Blvd/Cheyenne and I-215/BLM			Howard Hughes Corporation
File Number:	F:\Depot\DSMemos\DS3983E.doc			Bart Anderson, P.E., DevCo
Parcel Number:	137-22-000-013			CCRFCD
Zoning Action:				CCDDS
FEMA Flood Zone	YES	X	NO	CCDPW
Proposed Storm Drain	YES	X	NO	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Transaction #
1st Submittal	8/7/2006	8/30/2006	Not Approved	$400.00	288923: $400
2nd Submittal	9/29/2006 & 10/30/2006	10/20/2006 & 11/13/2006	Not Approved	$400.00	Paid: $400
3rd Submittal	11/22/2006	12/4/2006	Conditional Approval	$400.00	58324: $400
4th Submittal	3/29/2007	4/13/2007	Approved	$400.00	66016: $400
CCRFCD	2/12/2007	2/12/2007	Concurrence	N/C	-
CCDDS	1/16/2007	1/16/2007	Concurrence	N/C	-
CCDPW	4/11/2007	4/13/2007	Concurrence	N/C	-
			TOTAL FEES (LDDRS):	$1600.00	---

REMARKS:

4th Submittal: Response to CCDPW comments.

The Master Drainage Study for the subject project has been reviewed and:

X	is approved subject to conformance to all City standards and the following conditions:
	must be resubmitted or supplemented including the following:
	is conditionally approved subject to Clark County Regional Flood Control District concurrence.
	is conditionally approved subject to Clark County Department of Development Service concurrence.
	is conditionally approved subject to Clark County Department of Public Works concurrence.

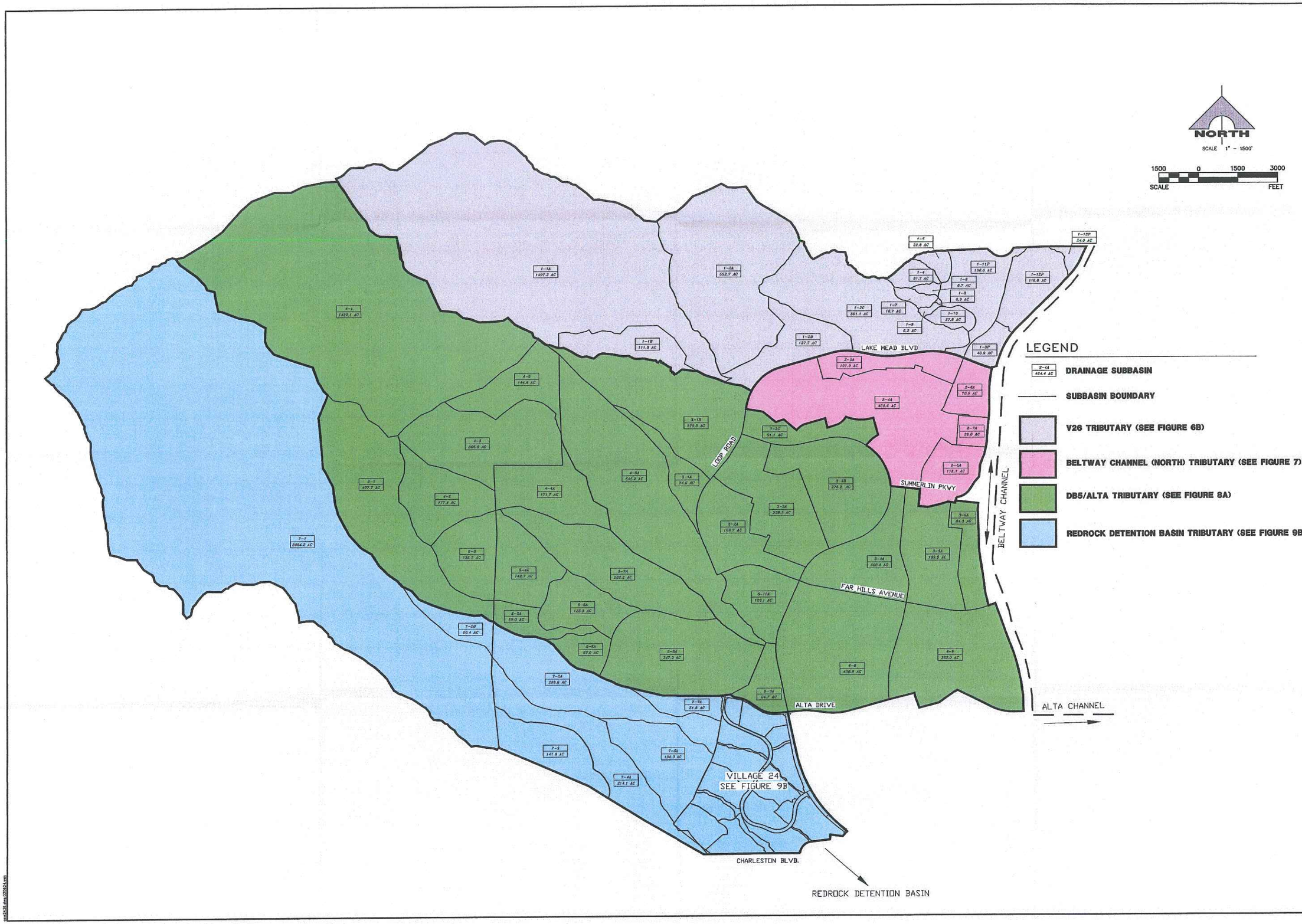
1. As condition of final approval, any change to land uses/densities will require an update to this Master Drainage Study. Detention basin or other mitigation will be required if the flow values and assumed land uses/densities are increased from this Master Drainage Study.

NOTE: Please be advised that all land surface area disturbances over 1 acre or any area adjacent to a water way must submit to the Nevada Division of Environmental Protection a "Notice of Intent"

to discharge that certifies a stormwater pollution prevention plan has been developed and is maintained on site; for inclusion in the Stormwater General Permit No. NVR100000. A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. For more information, including forms and applications see http://ndep.nv.gov/bwpc/storm01.htm or call (775) 687-9429.

END OF REMARKS
osk

T/R/S: T21S/R59E/3 & 4
AREA K-21



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ISSUE EDITOR:
PLOT DATE: 01-18-07
PLOT TIME: 09:46:22

REV. DATE DESCRIPTION DATE AGEN. APP. DATE GCW. APP. DATE:

G.C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
1555 S. RAINBOW BOULEVARD · LAS VEGAS, NV 89146
T: 702.804.2000 · F: 702.804.2299 · GCWALLACE.COM

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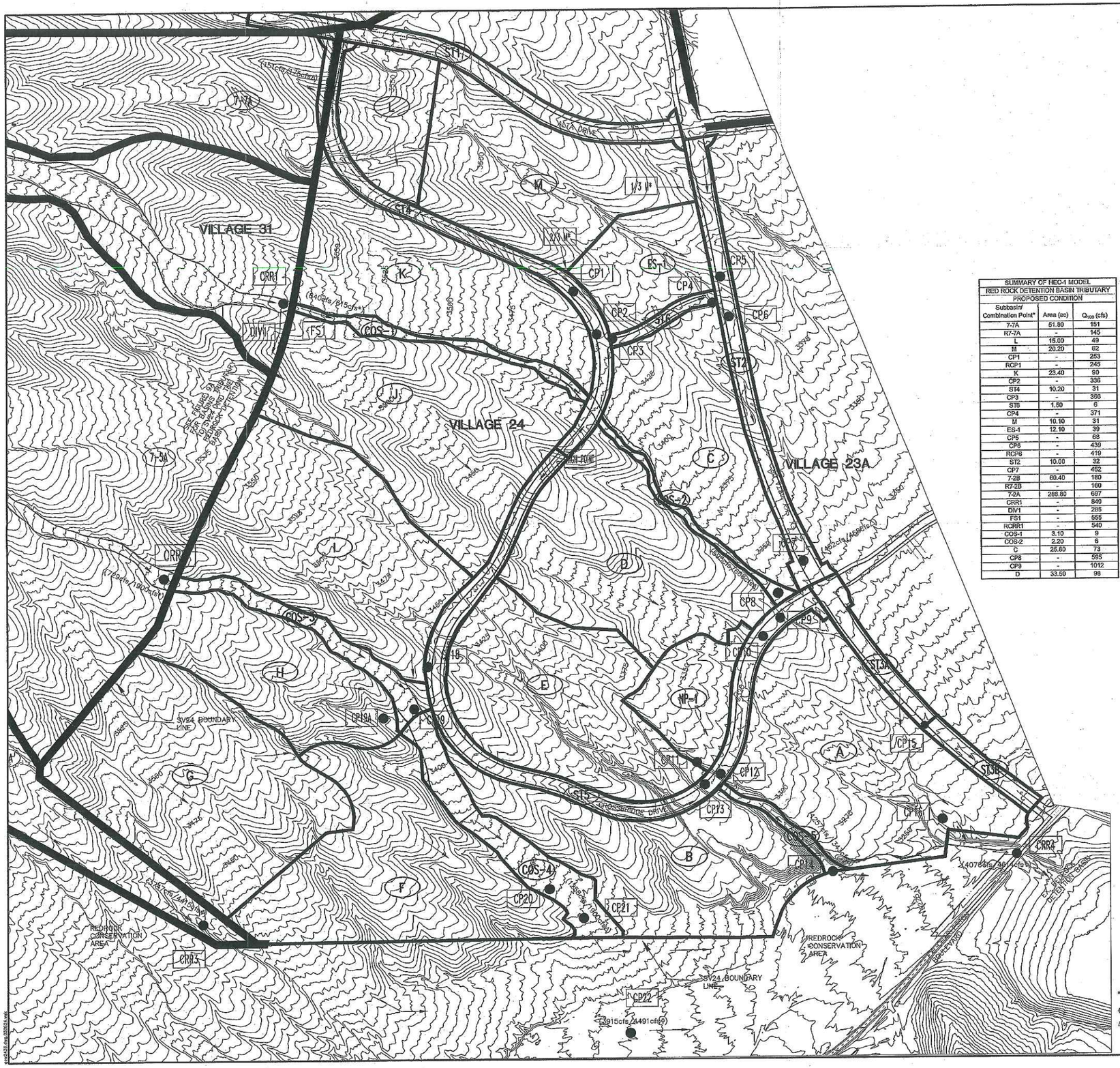
2006 SUMMERLIN WEST PLANNING AREA
FLOOD CONTROL MASTER PLAN UPDATE

FIGURE 5

OVERALL PROPOSED DRAINAGE MAP

DRAWING
FIG 5
SHT OF SHTS



NORTH

LEGEND

- SUBBASIN BOUNDARY
- (ON1) SUBBASIN DESIGNATION
- CP1 COMBINATION POINT
- FLOW DIRECTION

GRAPHIC SCALE

300 0 150 300

(IN FEET)

1 inch = 300 ft.

SUMMARY OF HEC-1 MODEL RED ROCK DETENTION BASIN TRIBUTARY PROPOSED CONDITION		
Subbasin/ Combination Point*	Area (ac)	Q_{100} (cfs)
7-7A	51.80	151
R7-7A	-	145
L	15.00	49
M	20.20	62
CP1	-	253
RCP1	-	245
K	23.40	90
CP2	-	336
ST4	10.20	31
-	-	356
ST5	1.50	6
CP4	-	371
M	10.10	31
ES-1	12.10	39
CP5	-	68
CP6	-	439
RCP6	-	419
ST2	10.00	32
CP7	-	452
7-2B	60.40	180
R7-2B	-	160
7-2A	288.60	697
CRR1	-	840
DIV1	-	285
FS1	-	555
RCRR1	-	540
COS-1	3.10	9
COS-2	2.20	6
C	25.80	73
CP8	-	595
CP9	-	1012
D	33.50	98

SUMMARY OF HEC-1 MODEL RED ROCK DETENTION BASIN TRIBUTARY PROPOSED CONDITION		
Subbasin/ Combination Point*	Area (ac)	Q_{100} (cfs)
CP10	-	1095
E	32.20	95
NP-1	9.80	21
CP11	-	117
CP12	-	1191
ST5	16.30	47
CP13	-	1238
RCP13	-	1230
B	31.10	94
COS-5	0.90	3
CP14	-	1257
A	39.90	115
ST3A	3.90	16
CP15	-	124
CP16	-	1355
7-5A	160.00	513
RETD1	-	291
RDIV1	-	283
CRR2	-	729
RCRR2	-	717
J	42.95	124
I	40.50	121
CP18	-	246
G	42.70	106
H	22.10	59
CP19A	-	164
COS-3	5.20	15
CP19	-	422
F	38.00	98
COS-4	5.10	28
CP20	-	118
CP21	-	1158

SUMMARY OF HEC-1 MODEL RED ROCK DETENTION BASIN TRIBUTARY PROPOSED CONDITION		
Subbasin/ Combination Point*	Area (ac)	Q_{100} (cfs)
7-1	2884.20	3573
R7-1	-	3559
7-3	141.84	398
R7-3	-	370
7-4A	214.10	457
CRR3	-	3747
RCRR3	-	3730
CP22	-	3915
RCP22	-	3897
CRR4	-	4076

*PER VILLAGE 24 CONCEPTUAL DRAINAGE STUDY.

ΦPER 1997 SUMMERLIN WEST STUDY.

ΔPER VILLAGE 24 UNIT 1 STUDY.

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ISSUE EDITOR:
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PLOT TIME: 10:53:10

DESCRIPTION	REV.	DATE	DATE LABEL	APP.	DATE	GCW APP.	DATE

G.C. WALLACE COMPANIES
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T 702.804.8000 F 702.804.8099 - GCWALLACE.COM

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2006 SUMMERLIN WEST PLANNING AREA
FLOOD CONTROL MASTER PLAN UPDATE
FIGURE 9B - PROPOSED CONDITION DRAINAGE MAP - 2
RED ROCK DETENTION BASIN TRIBUTARY

DRAWING
FIG 9B
SHT OF SHTS

HYDROLOGIC CRITERIA AND DESIGN MANUAL

TIME OF CONCENTRATION

G. C. WALLACE, INC.
Engineers/Planners/Surveyors

2006 Summerlin West Flood Control Master Plan Update
Developed Condition-Red Rock Detention Basin Tributary

Project No: 62A.W04.007
Date: 7/25/2006
Calculated by: rnl

SUB-BASIN DATA						INITIAL / OVERLAND TIME (Ti)			TRAVEL TIME (Tt)					Tc CHECK URBANIZED BASINS		Tc	Tlag	REMARKS
DESIG: (1)	DEV./EX. (D or E)	CN (16)	K (2)	AREA Ac (3)	AREA Sq Mi (4)	INITIAL LENGTH Feet (5)	SLOPE % (6)	Ti Min (7)	TRAVEL LENGTH Feet (8)	SLOPE % (9a)	V1 VELOCITY fps (9b)	V2 VELOCITY fps (10)	Tt Min (11)	TOTAL LENGTH Feet (12)	Tc = (L/180)+10 Min (13)	Min (14)	Tlag = 0.6Tc/60 Hours (15)	Remarks:
7-1																		REFERENCED
7-2A	D	88.2	0.7742	288.8	0.4513	200	2.0	6.6	9426	8.5	5.9	8.9	18.1	9626	63.5	24.7	**0.247**	3.50
7-2B	E	88	0.7716	60.4	0.0944	500	8.0	6.6	3630	8.0	4.2	8.3	8.3	4130	N/A	14.9	**0.149**	3.58
7-3																		REFERENCED
7-4A	E	88	0.7716	214.1	0.3345	500	8.0	6.6	10732	7.0	3.9	7.8	24.1	11232	N/A	30.7	**0.307**	3.46
7-5A	D	87	0.7584	190.0	0.2969	200	2.0	6.9	4110	7.8	5.6	8.5	8.5	4310	33.9	15.4	**0.154**	3.43
7-7A	D	88.7	0.7808	51.8	0.0809	200	2.0	6.4	3641	7.4	5.5	8.3	7.8	3841	31.3	14.3	**0.143**	3.44

$Tc = Ti + Tt$ $Tlag = 0.6\ Tc$

$Ti = 1.8\ (1.1 - K)\ L^{1/2} / S^{1/3}$

$K = 0.0132\ (CN) - 0.39$

For the travel time (Tt) calculations,
V1 applies to the first 500 feet of travel distance;
V2 applies to the remaining travel distance.

Existing: $V1 = 14.8*(S/100)^{1/2}$ $V2 = 29.4*(S/100)^{1/2}$

Developed: $V1 = 20.2*(S/100)^{1/2}$ $V2 = 30.6*(S/100)^{1/2}$

REFERENCE:

STANDARD FORM 4

```
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             JUN  1998                 *
*           VERSION 4.1                 *
*                                       *
*  RUN DATE   25JUL06  TIME  11:32:01   *
*                                       *
*****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*           (916) 756-1104              *
*                                       *
*****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X       X     X        XX
X     X  X       X              X
XXXXXXX  XXXX    X        XXXXX  X
X     X  X       X              X
X     X  X       X     X        X
X     X  XXXXXXX  XXXXX         XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM


```
LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

          *DIAGRAM
    1     ID   2006 SUMMERLIN WEST PLANNING AREA
    2     ID   FLOOD CONTROL MASTER PLAN UPDATE
    3     ID   "G.C. WALLACE, INC. "
    4     ID   REDROCK.H1
    5     ID   DEVELOPED CONDITION-TRIBUTARY TO RED ROCK DETENTION BASIN
    6     ID   DESIGN STORM = 100-YEAR 6-HOUR STORM
    7     ID   STORM DISTRIBUTION = SDN3
          *
    8     ID     JR CARDS CONTAIN DARFS BASED ON THE FOLLOWING VALUES:
    9     ID
   10     ID     AREA (SQUARE MILES)    DARF
   11     ID    0-0.5 -------- -------- 0.990
   12     ID    0.5-1 -------- -------- 0.975
   13     ID    1-2 -------- -------- 0.950
   14     ID    2-3 -------- -------- 0.925
   15     ID    3-4 -------- -------- 0.915
   16     ID    4-5 -------- -------- 0.908
   17     ID    5-6 -------- -------- 0.903
   18     ID    6-7 -------- -------- 0.895
   19     ID    7-8 -------- -------- 0.885
   20     ID
   21     IT       5       0       0     300
   22     IO       5
   23     IN       5       0       0
   24     JR    PREC    0.99   0.975    0.95   0.925   0.915   0.908   0.903   0.895   0.885
          *

   25     KK    7-7A
   26     KM    SUBBASIN 7-7A
   27     KM    AREA 51.8 ACRES
   28     BA   0.081
   29     PB    3.44
   30     PC    .000    .020    .057    .070    .087    .108    .124    .130    .130    .130
   31     PC    .130    .130    .130    .133    .140    .142    .148    .158    .172    .181
   32     PC    .190    .197    .199    .200    .201    .204    .214    .229    .241    .249
   33     PC    .251    .256    .270    .278    .281    .283    .295    .322    .352    .409
   34     PC    .499    .590    .710    .744    .781    .812    .819    .835    .851    .856
   35     PC    .860    .868    .876    .888    .910    .926    .937    .950    .970    .976
   36     PC    .982    .985    .987    .989    .990    .993    .993    .994    .995    .998
   37     PC    .998    .999    1.00
   38     LS       0    88.7
   39     UD   0.143
          *

   40     KK   R7-7A
   41     KM   ROUTE 7-7A THRU ST-7 TO CP1
   42     RD    1350    .028    .017           TRAP       0      50
          *
```



```
LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

   43     KK       L
   44     KM    SUBBASIN PARCEL L
   45     KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
   46     KM            AREA  15.0  ACRES
   47     BA  .02344
   48     PB    3.34
   49     LS       0      92
   50     UD    .101
          *

   51     KK       M
   52     KM    SUBBASIN PARCEL M
   53     KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
   54     KM            AREA  30.3  ACRES (USE 2/3 AREA 20.2 ACRES)
   55     BA  .03156
   56     PB    3.34
```

```
 57          LS       0      92
 58          UD    .138
             *

 59          KK     CP1
 60          KM    CONCENTRATION POINT CP1
 61          KM    COMBINE R7-7A, PARCEL L AND PARCEL M IN SD
 62          HC       3
             *

 63          KK    RCP1
 64          KM    ROUTE CP1 TO CP3
 65          KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
 66          RD     800    .028    .017            TRAP       0      50
             *

 67          KK       K
 68          KM    SUBBASIN PARCEL K
 69          KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
 70          KM            AREA  23.4  ACRES
 71          BA  .04641
 72          PB    3.34
 73          LS       0      91
 74          UD    .124
             *

 75          KK     CP2
 76          KM    CONCENTRATION POINT CP2
 77          KM    COMBINE K AND CP1
 78          HC       2
             *

 79          KK     ST4
 80          KM    SUBBASIN STREET AREA ST4
 81          KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
 82          KM            AREA  10.2  ACRES
 83          BA  .01594
 84          PB    3.34
1                                          HEC-1 INPUT                                                    PAGE  3

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 85          LS       0      94
 86          UD    .184
             *

 87          KK    CP3
 88          KM    CONCENTRATION POINT CP3
 89          KM    COMBINE ST4 AND CP2
 90          HC       2
             *

 91          KK     ST6
 92          KM    SUBBASIN SPOKE "A"
 93          KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
 94          KM            AREA  1.5  ACRES
 95          BA  .00234
 96          PB    3.34
 97          LS       0      94
 98          UD    .075
             *

 99          KK    CP4
100          KM    CONCENTRATION POINT CP4
101          KM    COMBINE CP3 AND ST6
102          HC       2
             *

103          KK       M
104          KM    SUBBASIN PARCEL M
105          KM    PARAMETERS REFERENCED FROM THE SV24 CONCEPTUAL STUDY
106          KM    BUT WITH 1/3 ACRES - TO VERIFY ACTUAL FLOW VALUE
107          KM    AT THE CROSSBRIDGE/SKY VISTA INTERSECTION (CP7)
108          KM    AREA  30.3  ACRES (USE 1/3 AREA 10.1 ACRES)
109          BA  .01578
110          PB    3.34
111          LS       0      92
112          UD    .138
             *

113          KK    ES-1
114          KM    SUBBASIN PARCEL ES-1
115          KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
116          KM            AREA  12.1  ACRES
117          BA  .01883
118          PB    3.34
119          LS       0      92
120          UD    .103
             *

121          KK    CP5
122          KM    CONCENTRATION POINT CP5
123          KM    COMBINE M AND ES-1 IN SKY VISTA
124          HC       2
             *
1                                          HEC-1 INPUT                                                    PAGE  4

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

125          KK     CP6
126          KM    CONCENTRATION POINT CP5
127          KM    COMBINE CP4 AND CP5A IN SKY VISTA
128          HC       2
             *

129          KK    RCP6
130          KM    ROUTE CP6 TO CP7
```

```
RD    1830    .036    .017            TRAP       0      50
*

KK     ST2
KM    SUBBASIN ST2 - SKY VISTA DRIVE
KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
KM            AREA  10.0  ACRES
BA  .01563
PB    3.34
LS       0      94
UD    .140
*

KK    CP7
KM    CONCENTRATION POINT CP7
KM    COMBINE ST2 AND CP6
HC       2
*

KK    7-2B
KM   SUBBASIN 7-2B
KM   AREA 60.4 ACRES
BA  0.0944
PB    3.58
LS       0      88
UD   0.149
*

KK   R7-2B
KM   ROUTE 7-2B THRU 7-2A TO CRR1
KM   LENGTH  9625 FEET
KM   SLOPE   7.1 %
KM    NSTEPS    K       X
RM       2    .129     .15
*

KK    7-2A
KM   SUBBASIN 7-2A
KM   AREA 288.8 ACRES
BA  0.4513
PB    3.50
LS       0    88.2
UD   0.247
*
```



```
LINE    ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

KK    CRR1
KM   COMBINE 7-2B AND 7-2A WEST OF SV24 SUBBASIN COS-1
HC       2
*

KK     FS1
KM   DIVERT 300 CFS TO COMBINATION POINT CRR2
DT    DIV1
DI       0     884
DQ       0     300
*

KK   RCRR1
KM   ROUTE CRR1 THRU SUBBASINS COS-1 AND COS-2 TO CP8
KM   LENGTH  3920 FEET
KM   SLOPE   5.8 %
KM    NSTEPS    K       X
RM       1    .058     .15
*

KK   COS-1
KM    SUBBASIN OPEN SPACE AREA COS-1
KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
KM            AREA  3.1  ACRES
BA  .00484
PB    3.34
LS       0      86
UD    .083
*

KK   COS-2
KM    SUBBASIN OPEN AREA COS-2
KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
KM            AREA  2.2  ACRES
BA  .00344
PB    3.34
LS       0      86
UD    .085
*

KK      C
KM    SUBBASIN PARCEL C
KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
KM            AREA  25.8  ACRES
BA  .04038
PB    3.34
LS       0      90
UD    .163
*
```



```
LINE    ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

KK     CP8
KM    CONCENTRATION POINT CP8
KM    COMBINE CRR1, PARCEL C, COS-1, AND COS-2
HC       4
*
```

```
206          KK     CP9
207          KM    CONCENTRATION POINT CP9
208          KM    COMBINE CP7 AND CP8
209          HC       2
             *

210          KK       D
211          KM    SUBBASIN PARCEL D
212          KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
213          KM             AREA  33.5  ACRES
214          BA  .05230
215          PB    3.34
216          LS       0       91
217          UD    .159
             *

218          KK    CP10
219          KM    CONCENTRATION POINT CP10
220          KM    COMBINE CP9 AND D IN DESERT MOON
221          HC       2
             *

222          KK       E
223          KM    SUBBASIN PARCEL E
224          KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
225          KM             AREA  32.2  ACRES
226          BA  .05036
227          PB    3.34
228          LS       0       91
229          UD    .151
             *

230          KK    NP-1
231          KM    SUBBASIN PARK AREA NP-1
232          KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
233          KM             AREA  9.8  ACRES
234          BA  .01531
235          PB    3.34
236          LS       0       82
237          UD    .132
             *

238          KK    CP11
239          KM    CONCENTRATION POINT CP11
240          KM    COMBINE E AND NP-1
241          HC       2
             *
```



```
LINE         ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

242          KK    CP12
243          KM    CONCENTRATION POINT CP12
244          KM    COMBINE CP11 AND CP10
245          HC       2
             *

246          KK     ST5
247          KM    SUBBASIN DESERT MOON ROAD ST5
248          KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
249          KM             AREA  16.3  ACRES
250          BA  .02541
251          PB    3.34
252          LS       0       94
253          UD    .204
             *

254          KK    CP13
255          KM    CONCENTRATION POINT CP13
256          KM    COMBINE ST5 AND CP12
257          HC       2
             *

258          KK   RCP13
259          KM    ROUTE CP13 THROUGH COS-6
260          RD     908    .066    .025           TRAP       0      50
             *

261          KK       B
262          KM    SUBBASIN PARCEL B
263          KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
264          KM             AREA  31.1  ACRES
265          BA  .04859
266          PB    3.34
267          LS       0       91
268          UD    .120
             *

269          KK   COS-5
270          KM    SUBBASIN OPEN AREA COS-5
271          KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
272          KM             AREA  0.9  ACRES
273          BA  .00141
274          PB    3.34
275          LS       0       86
276          UD    .090
             *

277          KK    CP14
278          KM    CONCENTRATION POINT CP14
279          KM    COMBINE CP13, B, AND COS-5
280          HC       3
             *
```



```
LINE         ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
```

```
KK       A
KM    SUBBASIN PARCEL A
KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
KM             AREA  39.9  ACRES
BA  .06234
PB    3.34
LS       0       90
UD    .150
*

KK    ST3A
KM    SUBBASIN STREET AREA FOR SKY VISTA DRIVE
KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
KM             AREA    ACRES
BA  .00609
PB    3.34
LS       0       94
UD    .052
*

KK    CP15
KM    CONCENTRATION POINT CP15
KM    COMBINE ST3A AND A
HC       2
*

KK    CP16
KM    CONCENTRATION POINT CP16
KM    COMBINE CP14 AND CP15
HC       2
*

KK    7-5A
KM   SUBBASIN 7-5A
KM   AREA 190.0 ACRES
BA   0.297
PB    3.43
LS       0       87
UD   0.154
*

KK   RETD1
KM   RETRIEVE DIVERTED FLOW FROM CRR1
DR    DIV1
*

KK   RDIV1
KM   ROUTE DIVERTED FLOW FROM CRRR1 TO CRR2
RD    1890    .010    .016            TRAP       0      25
*
```

1 HEC-1 INPUT PAGE 9

```
LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

KK    CRR2
KM   COMBINE 7-5A AND DIVERTED FLOW FROM CRR1 WEST OF SV24 SUBBASIN COS-1
HC       2
*

KK   RCRR2
KM    ROUTE CRR2 THRU SV24 SUBBASINS COS-3 AND COS-4 TO CP21
KM    LENGTH  3845 FEET
KM    SLOPE   6.4 %
KM    NSTEPS    K       X
RM       1    .054     .15
*

KK       J
KM    SUBBASIN PARCEL J
KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
KM             AREA  42.96  ACRES
BA  .06713
PB    3.34
LS       0       91
UD    .165
*

KK       I
KM    SUBBASIN PARCEL I
KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
KM             AREA  40.5  ACRES
BA  .06328
PB    3.34
LS       0       91
UD    .143
*

KK    CP18
KM    CONCENTRATION POINT CP18
KM    COMBINE J AND I
HC       2
*

KK       G
KM    SUBBASIN PARCEL G
KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
KM             AREA  42.7  ACRES
BA  .06672
PB    3.34
LS       0       86
UD    .159
*
```

1 HEC-1 INPUT PAGE 10

```
LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
```

```
355          KK       H
356          KM    SUBBASIN PARCEL H
357          KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
358          KM            AREA  22.1  ACRES
359          BA  .03453
360          PB    3.34
361          LS       0       86
362          UD    .106
             *

363          KK   CP19A
364          KM    CONCENTRATION POINT CP19A
365          KM    COMBINE G AND H
366          HC       2
             *

367          KK   COS-3
368          KM  SUBBASIN OPEN SPACE AREA COS-3
369          KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
370          KM            AREA  5.2  ACRES
371          BA  .00813
372          PB    3.34
373          LS       0       86
374          UD    .078
             *

375          KK    CP19
376          KM    CONCENTRATION POINT CP19
377          KM    COMBINE CP18, CP19A, AND COS-3
378          HC       3
             *

379          KK       F
380          KM    SUBBASIN PARCEL F
381          KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
382          KM            AREA  38.0  ACRES
383          BA  .05938
384          PB    3.34
385          LS       0       86
386          UD    .141
             *

387          KK   COS-4
388          KM    SUBBASIN OPEN SPACE AREA COS-4
389          KM    REFERENCED FROM THE SV24 CONCEPTUAL STUDY
390          KM            AREA  9.1  ACRES
391          BA  .01422
392          PB    3.34
393          LS       0       86
394          UD    .068
             *
```



```
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

395          KK    CP20
396          KM    CONCENTRATION POINT CP20
397          KM    COMBINE F AND COS4
398          HC       2
             *

399          KK    CP21
400          KM    CONCENTRATION POINT CP21
401          KM    COMBINE CRR2, CP20, AND CP19
402          HC       3
             *

403          KK     7-1
404          KM   OFFSITE SUBBASIN 7-1
405          KM   MODIFIED BASIN RR14A FROM THE CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT
406          KM   2002 MASTER PLAN UPDATE - TROPICANA/FLAMINGO WASH WATERSHED
407          KM   BASIN RR14A = 7-1 AND 7-2B (7-1 = 2884.2 ACRES)
408          BA   4.507
409          PB    3.75
410          LU       0     0.5       0
411          UD   0.725
             *

412          KK    R7-1
413          KM   ROUTE SUBBASIN 7-1 THRU BASIN 7-4 TO CRR3
414          KM    LENGTH  11,231 FEET
415          KM    SLOPE   6.9 %
416          KM     NSTEPS    K       X
417          RM       2    .152     .15
             *

418          KK     7-3
419          KM   SUBBASIN 7-3
420          KM   AREA 141.84 ACRES
421          KM   REFERENCED FROM THE 1997 SUMMERLIN WEST STUDY
422          BA    .222
423          PB    3.43
424          LS       0       87
425          UD    .120
             *

426          KK    R7-3
427          KM   ROUTE SUBBASIN 7-3 TO THRU SUBBASIN 7-4 TO CRR3
428          KM    LENGTH  5377 FEET
429          KM    SLOPE   6.6 %
430          KM    NSTEPS    K       X
431          RM       1    .074     .15
             *
```

```
LINE          ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

 432          KK    7-4A
 433          KM   SUBBASIN 7-4A
 434          KM   AREA 214.1 ACRES
 435          BA   .3345
 436          PB    3.46
 437          LS       0      88
 438          UD    .307
              *

 439          KK    CRR3
 440          KM   COMBINE 7-1, 7-3, AND 7-4A
 441          HC       3
              *

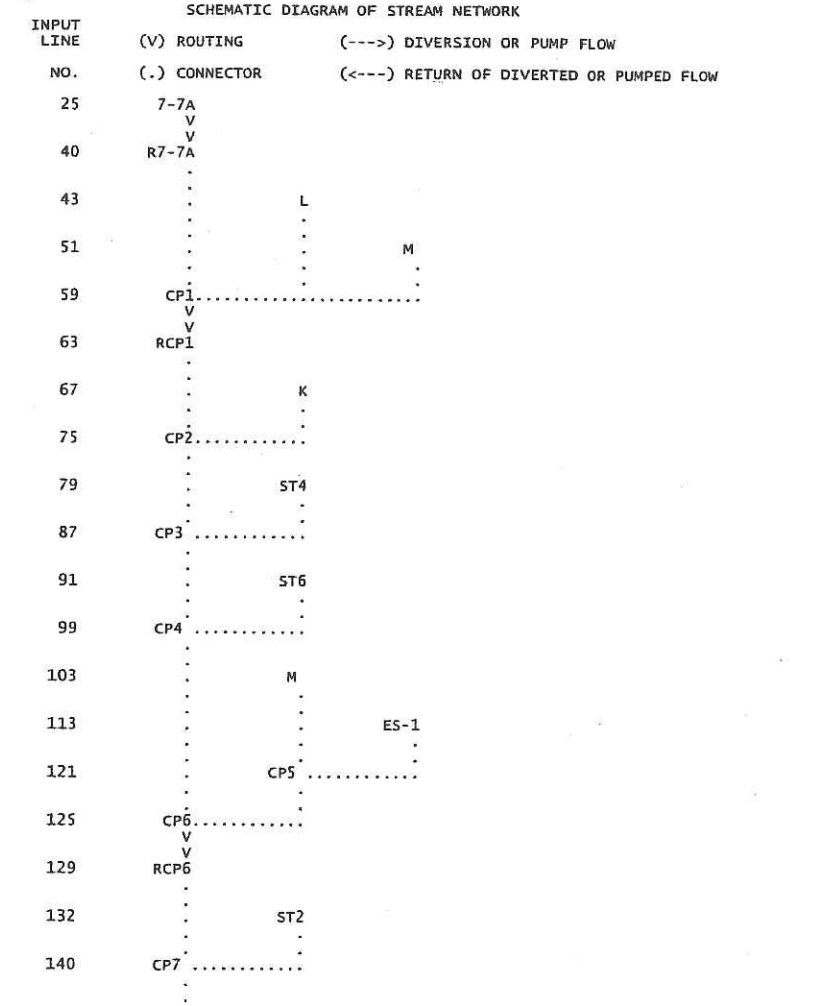
 442          KK   RCRR3
 443          KM   ROUTE CRR3 TO CP22
 444          KM    LENGTH  2951 FEET
 445          KM    SLOPE   5.4 %
 446          KM    NSTEPS    K        X
 447          RM       1    .045     .15
              *

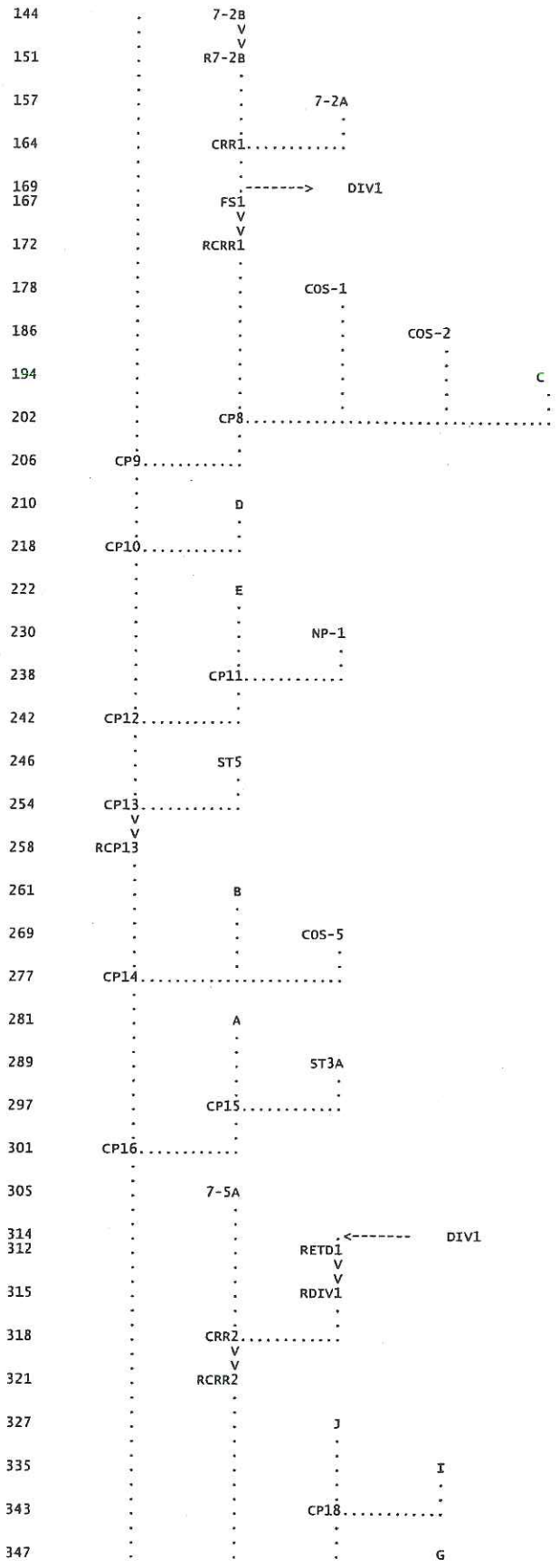
 448          KK    CP22
 449          KM    CONCENTRATION POINT CP21
 450          KM    COMBINE CP21 AND CRR3
 451          HC       2
              *

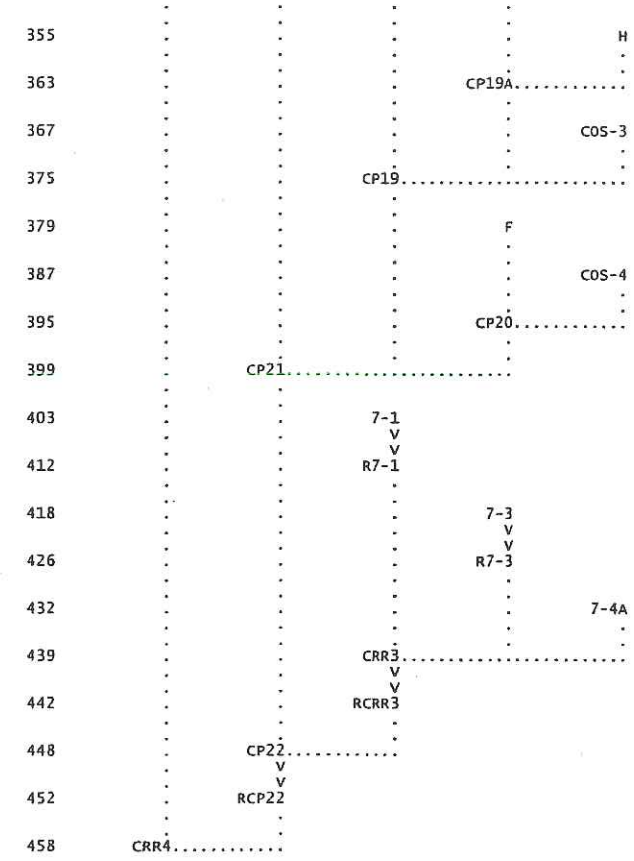
 452          KK   RCP22
 453          KM   ROUTE CP22 TO CRR4
 454          KM    LENGTH  2876 FEET
 455          KM    SLOPE   2.3 %
 456          KM     NSTEPS   K       X
 457          RM       1    .067     .15
              *

 458          KK    CRR4
 459          KM   COMBINE ALL AT THE EXISTING CHARLESTON BRIDGE OPENING
 460          HC       2
              *
 461          ZZ
1
```

SCHEMATIC DIAGRAM OF STREAM NETWORK




144
7-2B
151
R7-2B
157
7-2A
164
CRR1
169
DIV1
167
FS1
172
RCRR1
178
COS-1
186
COS-2
194
C
202
CP8
206
CP9
210
D
218
CP10
222
E
230
NP-1
238
CP11
242
CP12
246
ST5
254
CP13
258
RCP13
261
B
269
COS-5
277
CP14
281
A
289
ST3A
297
CP15
301
CP16
305
7-5A
314
DIV1
312
RETD1
315
RDIV1
318
CRR2
321
RCRR2
327
J
335
I
343
CP18
347
G



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             JUN  1998                 *
*           VERSION 4.1                 *
*                                       *
*  RUN DATE   25JUL06  TIME  11:32:01   *
*                                       *
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*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET             *
*       DAVIS, CALIFORNIA 95616         *
*           (916) 756-1104              *
*                                       *
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2006 SUMMERLIN WEST PLANNING AREA
FLOOD CONTROL MASTER PLAN UPDATE
"G.C. WALLACE, INC. "
REDROCK.H1
DEVELOPED CONDITION-TRIBUTARY TO RED ROCK DETENTION BASIN
DESIGN STORM = 100-YEAR 6-HOUR STORM
STORM DISTRIBUTION = SDN3
JR CARDS CONTAIN DARFS BASED ON THE FOLLOWING VALUES:

AREA (SQUARE MILES)			DARF
0-0.5	--------	--------	0.990
0.5-1	--------	--------	0.975
1-2	--------	--------	0.950
2-3	--------	--------	0.925
3-4	--------	--------	0.915
4-5	--------	--------	0.908
5-6	--------	--------	0.903
6-7	--------	--------	0.895
7-8	--------	--------	0.885

22 IO OUTPUT CONTROL VARIABLES

IPRNT		5	PRINT CONTROL
IPLOT		0	PLOT CONTROL
QSCAL		0.	HYDROGRAPH PLOT SCALE

IT HYDROGRAPH TIME DATA

NMIN		5	MINUTES IN COMPUTATION INTERVAL
IDATE	1	0	STARTING DATE
ITIME		0000	STARTING TIME
NQ		300	NUMBER OF HYDROGRAPH ORDINATES
NDDATE	2	0	ENDING DATE
NDTIME		0055	ENDING TIME
ICENT		19	CENTURY MARK

COMPUTATION INTERVAL .08 HOURS
TOTAL TIME BASE 24.92 HOURS

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          ENGLISH UNITS
               DRAINAGE AREA         SQUARE MILES
               PRECIPITATION DEPTH   INCHES
               LENGTH, ELEVATION     FEET
               FLOW                  CUBIC FEET PER SECOND
               STORAGE VOLUME        ACRE-FEET
               SURFACE AREA          ACRES
               TEMPERATURE           DEGREES FAHRENHEIT

     JP          MULTI-PLAN OPTION
                      NPLAN          1  NUMBER OF PLANS

     JR          MULTI-RATIO OPTION
                     RATIOS OF PRECIPITATION
                     .99      .98      .95      .93      .92      .91      .90      .89      .88
***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH   RCRR3.
      ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH   RCRR3.
      ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH   RCRR3.
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      ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
***** WARNING *****  POSSIBLE INSTABILITIES IN THE MUSKINGUM ROUTING FOR REACH   RCRR3.
      ADJUST NSTPS AND/OR COMPUTATION INTERVAL TO MEET CRITERIA IN USER MANUAL).
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PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN		RATIOS APPLIED TO PRECIPITATION RATIO 1 .99	RATIO 2 .98	RATIO 3 .95	RATIO 4 .93	RATIO 5 .92	RATIO 6 .91	RATIO 7 .90	RATIO 8 .89	RATIO 9 .88
HYDROGRAPH AT													
+	7-7A	.08	1	FLOW	151.	148.	143.	138.	136.	135.	134.	132.	130.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
ROUTED TO													
+	R7-7A	.08	1	FLOW	145.	141.	137.	131.	130.	128.	127.	125.	124.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT													
+	L	.02	1	FLOW	49.	48.	47.	45.	45.	44.	44.	44.	43.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT													
+	M	.03	1	FLOW	62.	61.	59.	58.	57.	56.	56.	55.	55.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
3 COMBINED AT													
+	CP1	.14	1	FLOW	253.	247.	240.	231.	229.	226.	224.	221.	218.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
ROUTED TO													
+	RCP1	.14	1	FLOW	245.	240.	233.	224.	221.	219.	217.	214.	211.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT													
+	K	.05	1	FLOW	90.	89.	86.	83.	82.	81.	81.	80.	79.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT													
+	CP2	.18	1	FLOW	336.	328.	318.	307.	303.	300.	297.	293.	290.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT													
+	ST4	.02	1	FLOW	31.	30.	29.	28.	28.	28.	28.	27.	27.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT													
+	CP3	.20	1	FLOW	366.	358.	348.	335.	331.	328.	325.	321.	317.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT													
+	ST6	.00	1	FLOW	6.	6.	5.	5.	5.	5.	5.	5.	5.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT													
+	CP4	.20	1	FLOW	371.	363.	352.	339.	335.	332.	329.	325.	320.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT													
+	M	.02	1	FLOW	31.	31.	30.	29.	28.	28.	28.	28.	27.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT													
+	ES-1	.02	1	FLOW	39.	39.	37.	36.	36.	35.	35.	35.	34.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT													
+	CP5	.03	1	FLOW	68.	67.	65.	63.	62.	61.	61.	60.	60.
				TIME	3.50	3.50	3.50	3.50	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT													
+	CP6	.24	1	FLOW	439.	430.	417.	402.	397.	393.	390.	385.	380.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58

ROUTED TO													
+	RCP6	.24	1	FLOW	419.	414.	398.	383.	378.	376.	376.	368.	361.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT													
+	ST2	.02	1	FLOW	32.	32.	31.	30.	30.	29.	29.	29.	28.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT													
+	CP7	.25	1	FLOW	452.	445.	429.	413.	408.	406.	405.	397.	390.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT													
+	7-2B	.09	1	FLOW	180.	176.	170.	164.	162.	160.	159.	157.	155.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
ROUTED TO													
+	R7-2B	.09	1	FLOW	160.	157.	152.	146.	144.	143.	141.	140.	138.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT													
+	7-2A	.45	1	FLOW	697.	683.	659.	636.	627.	620.	615.	608.	599.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
2 COMBINED AT													
+	CRR1	.55	1	FLOW	857.	840.	811.	782.	771.	763.	757.	748.	736.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
DIVERSION TO													
+	DIV1	.55	1	FLOW	291.	285.	275.	265.	262.	259.	257.	254.	250.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT													
+	FS1	.55	1	FLOW	566.	555.	536.	517.	509.	504.	500.	494.	486.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
ROUTED TO													
+	RCRR1	.55	1	FLOW	551.	540.	522.	503.	496.	491.	487.	481.	474.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
HYDROGRAPH AT													
+	COS-1	.00	1	FLOW	9.	9.	8.	8.	8.	8.	8.	8.	8.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT													
+	COS-2	.00	1	FLOW	6.	6.	6.	6.	6.	6.	6.	5.	5.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT													
+	C	.04	1	FLOW	73.	71.	69.	67.	66.	65.	65.	64.	63.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
4 COMBINED AT													
+	CP8	.59	1	FLOW	608.	595.	575.	555.	547.	541.	537.	531.	523.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
2 COMBINED AT													
+	CP9	.85	1	FLOW	1033.	1012.	980.	943.	932.	925.	918.	903.	890.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT													
+	D	.05	1	FLOW	98.	96.	93.	90.	89.	88.	87.	86.	85.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT													
+	CP10	.90	1	FLOW	1117.	1095.	1060.	1021.	1009.	1000.	993.	978.	963.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT													
+	E	.05	1	FLOW	95.	94.	91.	88.	87.	86.	85.	84.	83.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT													
+	NP-1	.02	1	FLOW	22.	21.	21.	20.	19.	19.	19.	19.	18.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT													
+	CP11	.07	1	FLOW	117.	115.	111.	107.	106.	105.	104.	103.	101.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT													
+	CP12	.96	1	FLOW	1215.	1191.	1153.	1110.	1097.	1088.	1080.	1064.	1048.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT													
+	ST5	.03	1	FLOW	47.	46.	44.	43.	42.	42.	42.	41.	41.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT													
+	CP13	.99	1	FLOW	1260.	1236.	1196.	1152.	1139.	1129.	1121.	1104.	1088.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
ROUTED TO													
+	RCP13	.99	1	FLOW	1255.	1230.	1189.	1145.	1133.	1121.	1115.	1097.	1081.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT													
+	B	.05	1	FLOW	94.	93.	90.	87.	86.	85.	84.	83.	82.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT													
+	COS-5	.00	1	FLOW	3.	2.	2.	2.	2.	2.	2.	2.	2.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT													
+	CP14	1.04	1	FLOW	1326.	1301.	1257.	1211.	1198.	1186.	1179.	1160.	1144.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67

CP13

CP18

CP19

HYDROGRAPH AT													
+	A	.06	1	FLOW	115.	113.	109.	105.	104.	103.	102.	101.	99.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT													
+	ST3A	.01	1	FLOW	16.	16.	15.	15.	15.	14.	14.	14.	14.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT													
+	CP15	.07	1	FLOW	124.	122.	118.	114.	112.	111.	110.	109.	107.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT													
+	CP16	1.11	1	FLOW	1429.	1401.	1355.	1306.	1291.	1278.	1271.	1251.	1233.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT													
+	7-5A	.30	1	FLOW	513.	502.	484.	467.	460.	455.	451.	445.	438.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT													
+	RETD1	.00	1	FLOW	291.	285.	275.	265.	262.	259.	257.	254.	250.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
ROUTED TO													
+	RDIV1	.00	1	FLOW	283.	277.	272.	258.	256.	256.	254.	249.	243.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
2 COMBINED AT													
+	CRR2	.30	1	FLOW	729.	715.	688.	662.	652.	645.	639.	631.	620.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
ROUTED TO													
+	RCRR2	.30	1	FLOW	717.	703.	677.	653.	643.	636.	630.	621.	611.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT													
+	J	.07	1	FLOW	124.	122.	118.	114.	113.	112.	111.	110.	108.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT													
+	I	.06	1	FLOW	121.	119.	115.	111.	110.	109.	108.	107.	105.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT													
+	CP18	.13	1	FLOW	246.	241.	233.	226.	223.	221.	219.	217.	213.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT													
+	G	.07	1	FLOW	106.	104.	100.	96.	95.	94.	93.	92.	90.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT													
+	H	.03	1	FLOW	59.	57.	55.	53.	52.	52.	51.	51.	50.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT													
+	CP19A	.10	1	FLOW	164.	160.	154.	148.	146.	145.	143.	142.	139.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT													
+	COS-3	.01	1	FLOW	15.	15.	15.	14.	14.	14.	14.	13.	13.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT													
+	CP19	.24	1	FLOW	422.	413.	399.	386.	380.	376.	373.	369.	363.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT													
+	F	.06	1	FLOW	98.	95.	92.	89.	87.	86.	85.	84.	83.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT													
+	COS-4	.01	1	FLOW	28.	28.	27.	26.	25.	25.	25.	24.	24.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT													
+	CP20	.07	1	FLOW	118.	116.	111.	107.	106.	104.	104.	102.	101.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
3 COMBINED AT													
+	CP21	.61	1	FLOW	1181.	1158.	1115.	1074.	1058.	1046.	1038.	1024.	1007.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT													
+	7-1	4.51	1	FLOW	4104.	4025.	3893.	3761.	3710.	3673.	3647.	3606.	3554.
				TIME	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17
ROUTED TO													
+	R7-1	4.51	1	FLOW	4010.	3933.	3804.	3675.	3625.	3589.	3564.	3524.	3473.
				TIME	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25
HYDROGRAPH AT													
+	7-3	.22	1	FLOW	398.	390.	376.	363.	357.	353.	351.	346.	341.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
ROUTED TO													
+	R7-3	.22	1	FLOW	370.	362.	349.	336.	331.	328.	325.	321.	316.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT													
+	7-4A	.33	1	FLOW	457.	448.	432.	417.	411.	407.	403.	399.	392.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
3 COMBINED AT													
+	CRR3	5.06	1	FLOW	4215.	4134.	3999.	3863.	3810.	3773.	3747.	3704.	3651.
				TIME	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25

+ ROUTED TO	RCRR3	5.06	1	FLOW	4197.	4116.	3981.	3847.	3794.	3756.	3730.	3688.	3635.
				TIME	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33
+ 2 COMBINED AT	CP22	5.67	1	FLOW	4403.	4319.	4177.	4037.	3982.	3943.	3915.	3871.	3816.
				TIME	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25
+ ROUTED TO	RCP22	5.67	1	FLOW	4383.	4299.	4158.	4018.	3963.	3924.	3897.	3853.	3798.
				TIME	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33
+ 2 COMBINED AT	CRR4	6.78	1	FLOW	4634.	4546.	4398.	4250.	4193.	4152.	4123.	4076.	4019.
				TIME	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33

1

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	INTERPOLATED TO COMPUTATION INTERVAL DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
FOR PLAN = 1 RATIO= .00									
R7-7A	MANE	2.87	145.98	215.31	2.24	5.00	144.73	215.00	2.24

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9695E+01 EXCESS= .0000E+00 OUTFLOW= .9697E+01 BASIN STORAGE= .5483E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
R7-7A	MANE	2.89	144.14	216.38	2.20	5.00	140.63	215.00	2.20

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9487E+01 EXCESS= .0000E+00 OUTFLOW= .9490E+01 BASIN STORAGE= .6204E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
R7-7A	MANE	2.91	138.19	218.23	2.12	5.00	136.86	215.00	2.12

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9150E+01 EXCESS= .0000E+00 OUTFLOW= .9152E+01 BASIN STORAGE= .5569E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
R7-7A	MANE	2.94	134.71	217.23	2.04	5.00	131.18	215.00	2.04

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8806E+01 EXCESS= .0000E+00 OUTFLOW= .8808E+01 BASIN STORAGE= .5065E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
R7-7A	MANE	2.95	132.73	218.01	2.01	5.00	130.43	215.00	2.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8684E+01 EXCESS= .0000E+00 OUTFLOW= .8686E+01 BASIN STORAGE= .6185E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
R7-7A	MANE	2.95	130.45	215.62	1.99	5.00	128.32	215.00	1.99

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8584E+01 EXCESS= .0000E+00 OUTFLOW= .8586E+01 BASIN STORAGE= .5295E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
R7-7A	MANE	2.96	130.08	216.01	1.97	5.00	127.11	215.00	1.97

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8514E+01 EXCESS= .0000E+00 OUTFLOW= .8516E+01 BASIN STORAGE= .7055E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
R7-7A	MANE	2.97	128.74	216.66	1.95	5.00	125.04	215.00	1.95

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8402E+01 EXCESS= .0000E+00 OUTFLOW= .8404E+01 BASIN STORAGE= .6093E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
R7-7A	MANE	2.98	127.08	217.48	1.92	5.00	123.67	215.00	1.92

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8275E+01 EXCESS= .0000E+00 OUTFLOW= .8277E+01 BASIN STORAGE= .7170E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
RCP1	MANE	1.49	249.98	216.76	2.33	5.00	245.47	215.00	2.33

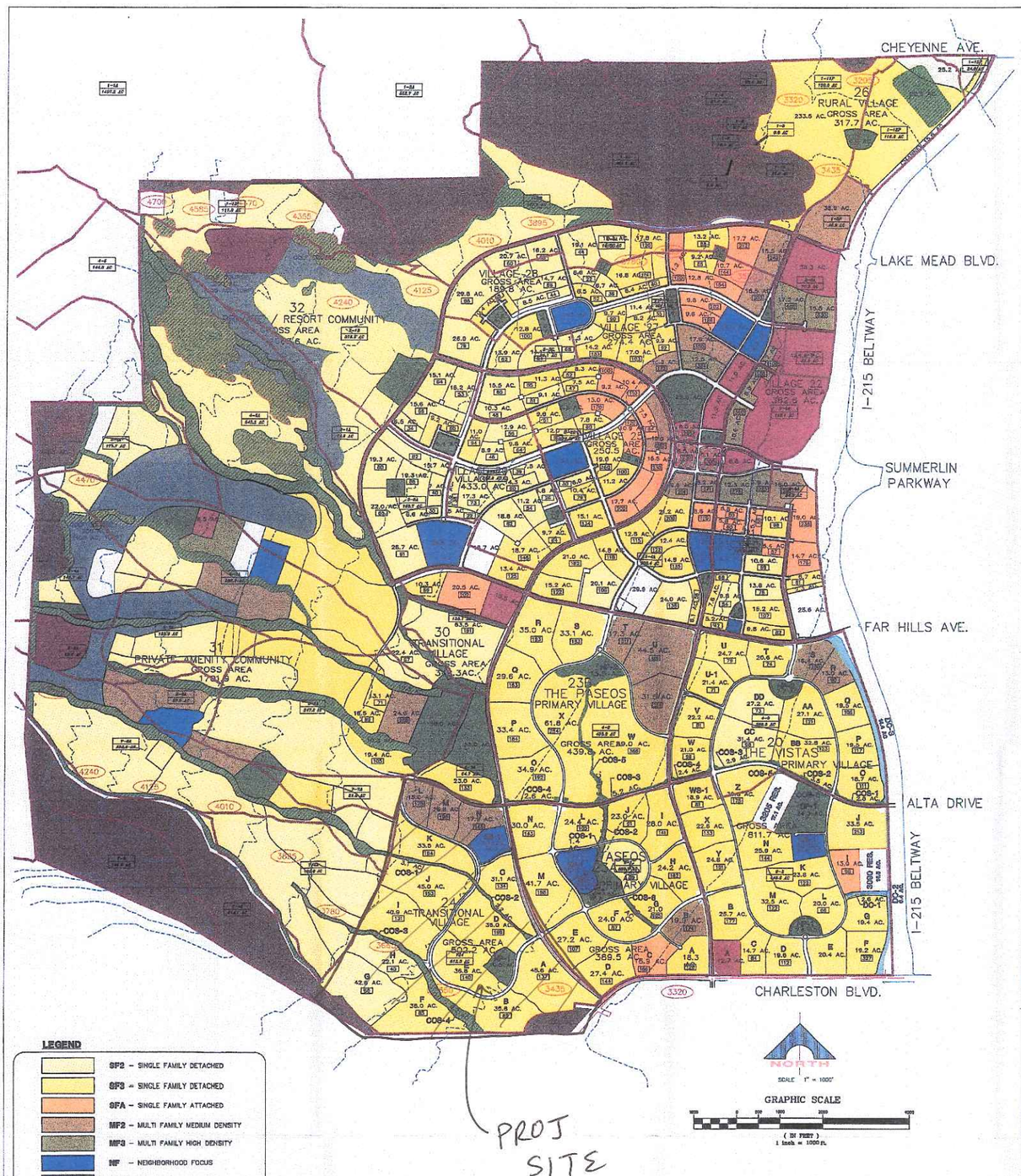
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1689E+02 EXCESS= .0000E+00 OUTFLOW= .1689E+02 BASIN STORAGE= .3303E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
RCP1	MANE	1.50	245.10	216.57	2.28	5.00	239.70	215.00	2.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1654E+02 EXCESS= .0000E+00 OUTFLOW= .1654E+02 BASIN STORAGE= .3556E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
RCP1	MANE	1.51	237.98	216.62	2.20	5.00	232.58	215.00	2.20

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1597E+02 EXCESS= .0000E+00 OUTFLOW= .1597E+02 BASIN STORAGE= .3519E-03 PERCENT ERROR= .0



		PROPOSED	EXISTING	REMAINING
VILLAGE 20	AC.	D.U.	D.U.	D.U.
SINGLE FAMILY	627.9	6123	6240	6123
MULTI FAMILY	48.9	370	280	90
COMMERCIAL	19.7	-	-	-
SCHOOL	15.5	-	-	-
PARK	51.2	-	-	-
GOLF COURSE	0	-	-	-
HOTEL	0	-	-	-
UNDEVELOPABLE	53.0	-	-	-
TOTAL	817	6493	6520	0
VILLAGE 21	AC.	D.U.	D.U.	D.U.
SINGLE FAMILY	627.9	2725	0	2725
MULTI FAMILY	65.6	1693	0	1693
COMMERCIAL	23.5	-	-	-
SCHOOL	14.7	-	-	-
PARK	81	-	-	-
GOLF COURSE	0	-	-	-
HOTEL	0	-	-	-
UNDEVELOPABLE	62.8	-	-	-
TOTAL	454.7	4418	0	4418
VILLAGE 22	AC.	D.U.	D.U.	D.U.
SINGLE FAMILY	19.4	228	0	228
MULTI FAMILY	101.3	2280	0	2280
COMMERCIAL	123.3	-	-	-
SCHOOL	14.5	-	-	-
PARK	28.1	-	-	-
GOLF COURSE	0	-	-	-
HOTEL	0	-	-	-
UNDEVELOPABLE	0	-	-	-
TOTAL	282.6	3208	0	3208
VILLAGE 23	AC.	D.U.	D.U.	D.U.
SINGLE FAMILY	638.8	2280	1981	299
MULTI FAMILY	132.1	370	174	696
COMMERCIAL	0	-	-	-
SCHOOL	13.4	-	-	-
PARK	49.9	-	-	-
GOLF COURSE	0	-	-	-
HOTEL	0	-	-	-
UNDEVELOPABLE	0	-	-	-
TOTAL	833.3	4233	1982	2977
VILLAGE 24	AC.	D.U.	D.U.	D.U.
SINGLE FAMILY	407.4	1320	0	1320
MULTI FAMILY	49.7	555	0	555
COMMERCIAL	0	-	-	-
SCHOOL	14.9	-	-	-
PARK	10.6	-	-	-
GOLF COURSE	0	-	-	-
HOTEL	0	-	-	-
UNDEVELOPABLE	12.7	-	-	-
TOTAL	501.2	1885	0	1885
VILLAGE 25	AC.	D.U.	D.U.	D.U.
SINGLE FAMILY	223.8	1283	0	1283
MULTI FAMILY	15.0	282	0	282
COMMERCIAL	0	-	-	-
SCHOOL	21.1	-	-	-
PARK	7.5	-	-	-
GOLF COURSE	0	-	-	-
HOTEL	0	-	-	-
UNDEVELOPABLE	0	-	-	-
TOTAL	268.5	2565	0	2565
VILLAGE 26	AC.	D.U.	D.U.	D.U.
SINGLE FAMILY	223.5	1243	-	1243
MULTI FAMILY	29.8	430	-	430
COMMERCIAL	0	-	-	-
SCHOOL	0	-	-	-
PARK	6.5	-	-	-
GOLF COURSE	0	-	-	-
HOTEL	0	-	-	-
UNDEVELOPABLE	40.8	-	-	-
TOTAL	307.7	672	0	1673
VILLAGE 27	AC.	D.U.	D.U.	D.U.
SINGLE FAMILY	554.6	1221	0	1221
MULTI FAMILY	13.8	178	0	178
COMMERCIAL	0	-	-	-
SCHOOL	0	-	-	-
PARK	9.8	-	-	-
GOLF COURSE	0	-	-	-
HOTEL	0	-	-	-
UNDEVELOPABLE	0	-	-	-
TOTAL	574.4	2099	0	2099
VILLAGE 28	AC.	D.U.	D.U.	D.U.
SINGLE FAMILY	192.1	684	0	684
MULTI FAMILY	0	0	0	0
COMMERCIAL	0	-	-	-
SCHOOL	14.5	-	-	-
PARK	7.3	-	-	-
GOLF COURSE	0	-	-	-
HOTEL	0	-	-	-
UNDEVELOPABLE	0	-	-	-
TOTAL	193.9	684	0	684
VILLAGE 29	AC.	D.U.	D.U.	D.U.
SINGLE FAMILY	575.0	1798	0	1798
MULTI FAMILY	0	0	0	0
COMMERCIAL	0	-	-	-
SCHOOL	29.8	-	-	-
PARK	12.7	-	-	-
GOLF COURSE	0	-	-	-
HOTEL	0	-	-	-
UNDEVELOPABLE	11.7	-	-	-
TOTAL	629.0	1798	0	1798
VILLAGE 30	AC.	D.U.	D.U.	D.U.
SINGLE FAMILY	170.9	914	0	914
MULTI FAMILY	44.1	289	0	289
COMMERCIAL	16.5	-	-	-
SCHOOL	0	-	-	-
PARK	53.0	-	-	-
GOLF COURSE	0	-	-	-
HOTEL	0	-	-	-
UNDEVELOPABLE	53.7	-	-	-
TOTAL	349.2	1203	0	1203
VILLAGE 31	AC.	D.U.	D.U.	D.U.
SINGLE FAMILY	1203.9	2955	0	2955
MULTI FAMILY	127.3	758	0	758
COMMERCIAL	9.5	-	-	-
SCHOOL	33.9	-	-	-
PARK	40.0	-	-	-
GOLF COURSE	200.0	-	-	-
HOTEL	30.0	-	-	-
UNDEVELOPABLE	378.6	-	-	-
TOTAL	1701.9	3713	0	3713
VILLAGE 32	AC.	D.U.	D.U.	D.U.
SINGLE FAMILY	60.1	100	0	100
MULTI FAMILY	0	0	0	0
COMMERCIAL	0	-	-	-
SCHOOL	0	-	-	-
PARK	40.0	-	-	-
GOLF COURSE	200.0	-	-	-
HOTEL	40.0	-	-	-
UNDEVELOPABLE	182.5	-	-	-
TOTAL	1008.6	100	0	100
GRAND TOTAL	AC.	D.U.	D.U.	D.U.
SINGLE FAMILY	6016.5	22280	449	1949
MULTI FAMILY	1002.2	8123	454	6329
COMMERCIAL	256.8	-	-	-
SCHOOL	191.2	-	-	-
PARK	538.6	-	-	-
GOLF COURSE	400.0	-	-	-
HOTEL	70.0	-	-	-
UNDEVELOPABLE	1317.6	-	-	-
	7793.7	30703	4855	26892

LEGEND

- SF2 – SINGLE FAMILY DETACHED
- SF3 – SINGLE FAMILY DETACHED
- SFA – SINGLE FAMILY ATTACHED
- MF2 – MULTI FAMILY MEDIUM DENSITY
- MF3 – MULTI FAMILY HIGH DENSITY
- NF – NEIGHBORHOOD FOCUS
- COS – COMMUNITY OPEN SPACE
- COS – RED ROCK
- OPEN LAND – FAIR CONDITION
- COM – COMMERCIAL
- H-1 – LIMITED RESORT AND APARTMENT DISTRICT
- BLM – LAND TURNED OVER TO BLM
- – NATURAL PRESERVATION
- UNDEVELOPABLE PROPERTY, RESERVED FOR WATER RESERVOIRS, POWER SUBSTATIONS, UNDEVELOPABLE TERRAIN, AND U.S. WATERS
- 113 PROPOSED DWELLING UNITS
- 3090 WATER ZONE DESIGNATION

DISCLAIMER:

THIS MAP DEPICTS EXISTING AND PROPOSED DEVELOPMENT IN SUMMERLIN. PROPOSED DEVELOPMENTS SHOWN ON THE PLAN ARE CONCEPTUAL AND PRELIMINARY, AND ARE INCLUDED ONLY TO SHOW INTENT AND RELATIONSHIP TO THE EXISTING COMMUNITY. PROPOSED DEVELOPMENTS MAY REQUIRE APPROVALS BY GOVERNMENTAL AGENCIES WHICH MAY NOT BE OBTAINED.

ALL PROPOSED LAND USES AND IMPROVEMENTS ARE SUBJECT TO MODIFICATION OR ELIMINATION WITHOUT NOTICE. THE INFORMATION DEPICTED HEREON SHOULD NOT BE A BASIS FOR A DECISION TO PURCHASE OR LEASE PROPERTY IN SUMMERLIN.

SUMMERLIN

SUMMERLIN WEST CONCEPTUAL LAND USE PLAN

FEBRUARY 22, 2006

The Howard Hughes Corporation
an affiliate of General Growth Properties, Inc.

G.C. WALLACE, INC.
Engineers/Planners/Surveyors

HA 233.3

UPDATE #3 TO THE TECHNICAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 24 – PARCEL A

62024.810

September 2007

Prepared for:

The Howard Hughes Corporation
10000 West Charleston Boulevard, Suite 200
Las Vegas, Nevada 89134
Phone: (702) 791- 4000
Fax: (702) 791- 4385

G. C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM			DATE: September 27, 2007
TO: Land Development Services Department of Public Works			FROM: Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	Technical Drainage Study for: Summerlin Village 24 - Parcel A – Update #5		COPIES TO: G.C. Wallace, Inc.
Cross Streets:	NWC of Charleston Blvd & Sky Vista Drive		Howard Hughes Corporation
File Number:	F:\Depot\DSMEMOS\DS3592G.doc		Bart Anderson, P.E., DevCo
Parcel Number:	137-22-000-010		CCRFCD
Zoning Action:			NDOT
FEMA Flood Zone	YES	NO X	
Proposed Storm Drain	YES X	NO	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Tran. No.
1st Submittal	6/9/2004	6/23/2004	Not Approved	$400.00	6310: $400
2nd Submittal	7/6/2004 & 7/20/2004	7/29/2004	Conditional Approval	$400.00	6614: $400
CCRFCD	9/21/2004	9/24/2004	Concurrence	N/C	N/C
3rd Submittal	3/27/2006	4/10/2006	Approved	$100.00	42357: $100
4th Submittal	7/18/2006	8/1/2006	Approved	$100.00	49761: $100
5th Submittal	9/5/2006	9/19/2006	Approved	N/C	N/C
6th Submittal	9/12/2007	9/26/2007	See Comments Below	$100.00	Paid: $100
			TOTAL FEES (LDDRS):	**$1,100.00**	—

REMARKS:

3rd Submittal: Update to validate a previous approved study because it was obtained more than 1 year ago

4th Submittal: Update #2 to correct Modified Type CM Inlets call-out

5th Submittal: Supplement to Update #2 to move the high point in a few lots to mid-point of pad

6th Submittal: Update #5 to revise knuckle grading in Keyport Lane, Fanwood Lane and Bluffwood Place and Lots 39 & 40's Pad elevations

The Drainage Study for the subject project has been reviewed and:

X	is approved subject to conformance to all City standards and the following conditions:
	must be resubmitted or supplemented including the following:
	is conditionally approved subject to Clark County Regional Flood Control District concurrence.

1. *The project proposes to construct facilities and/or increase flows within Nevada Department of Transportation (NDOT) right-of-way. The engineer must contact NDOT for encroachment permit for the proposed project.*

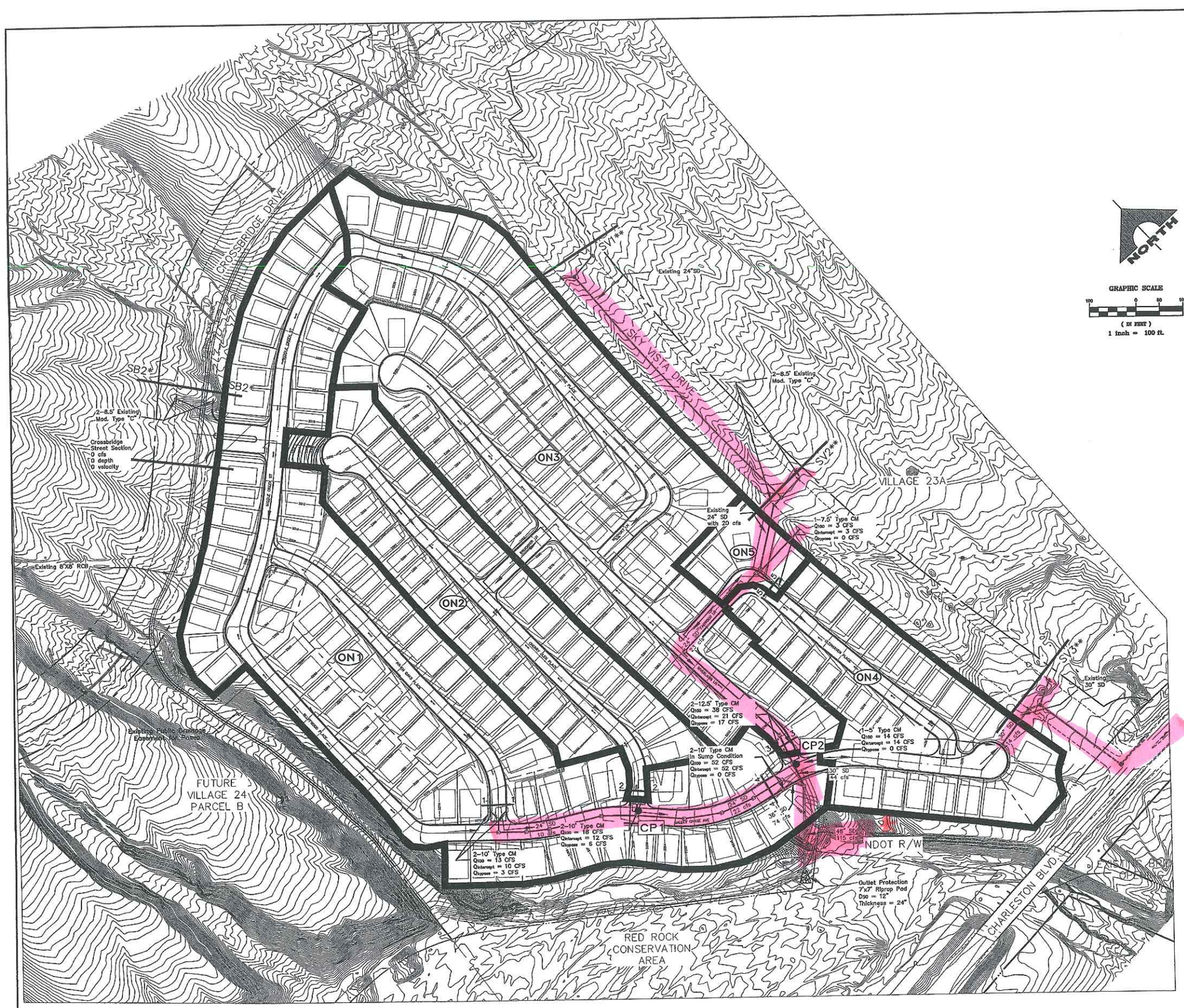
2. *All drainage easements must be "Common Lots" and "Public Drainage Easement to be privately maintained by the Homeowners Association" to be labeled in the grading plan and recorded as such on the final map.*

NOTE: Any future changes to the proposed design (or design assumptions) as outlined in the approved drainage study and attached preliminary grading plan which affect drainage must be addressed in a Drainage Study Amendment and accepted by the City of Las Vegas Flood Control Section. Additionally, conditional acceptance of a drainage study is valid for a period of one (1) year. If the proposed construction has not been completed in that time period, the City of Las Vegas reserves the right to require additional conditions and/or submission and acceptance of a complete drainage study update prior to further construction of a project.

NOTE: Please be advised that all land surface area disturbances over 1 acre or any area adjacent to a water way must submit to the Nevada Division of Environmental Protection a "Notice of Intent" to discharge that certifies a stormwater pollution prevention plan has been developed and is maintained on site; for inclusion in the Stormwater General Permit No. NVR100000. A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. For more information, including forms and applications see http://ndep.nv.gov/bwpc/storm01.htm or call (775) 687-9429.

END OF REMARKS
B&H/ays

T/R/S: T20S/R59E/33 & 34
AREA K-33



GRAPHIC SCALE

100 0 50 100

(IN FEET)

1 inch = 100 ft.

LEGEND

- SUBBASIN BOUNDARY
- (ON1) SUBBASIN DESIGNATION
- CP1 COMBINATION POINT
- FLOW DIRECTION
- SV1 SV1 STREET SECTION LOCATION

A1 →

SUMMARY OF HEC-1 MODEL

BASIN / CONCENTRATION POINT	AREA (ac)	Q100 (cfs)	Q10 (cfs)
ON1	13.96	41	19
ON2	5.38	18	8
CP1	–	56	26
ON3	12.07	38	17
ON5	0.82	3	1
CP2	–	95	44
ON4	4.58	14	6

SUMMARY OF STREET SECTIONS

STREET SECTION	DISCHARGE (cfs)	CHANNEL SLOPE (%)	ACTUAL DEPTH (ft)	VELOCITY (ft/s)	VxD
SECTION 1–1	13	5.75	0.4	5.2	1.8
SECTION 2–2	18	5.12	0.4	5.4	2.1
SECTION 3–3	38	6.31	0.5	7.0	3.5
SECTION 4–4	48	5.00	0.5	6.8	3.4
SECTION 5–5	3	2.30	0.3	3.1	0.9

SUMMARY OF REFERENCED EXTERIOR STREET SECTIONS

STREET SECTION	DISCHARGE (cfs)	CHANNEL SLOPE (%)	ACTUAL DEPTH (ft)	VELOCITY (ft/s)	VxD
SECTION SV1**	11	5.8	0.3	5.1	1.6
SECTION SV2**	10	5.8	0.3	5.0	1.6
SECTION SV3**	11	1.5	0.4	3.1	1.2
SECTION SB2*	7	1.6	0.4	2.8	1.1

* REFERENCED FROM UNIT 1 STUDY

** REFERENCED FROM SKY VISTA STUDY

DESIGN:
DRAWN:
CHECK:
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 02-13-08
PLOT TIME: 07:36:23

REV	DATE	DESCRIPTION	DATE	AGEN. APP.	DATE	CONT. APP.

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE (702) 804-2000 • FAX (702) 804-2299

G:\62024-SM10\drainage\Update 2\09_5.dwg

SUMMERLIN VILLAGE 24
PARCEL A
FIGURE 5
PROPOSED CONDITIONS

SHEET
FIG 5R
OF SHTS

stock36.fmw 020912.cfg

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

TIME OF CONCENTRATION

G.C. Wallace, Inc.
File: SF4.WB2
Project No.: 62024.810

SUMMERLIN VILLAGE 24
VILLAGE 24 PARCEL A
PROPOSED CONDITIONS

BY: CJK
DATE: 06/08/04

SUB-BASIN DATA						INITIAL / OVERLAND TIME (Ti)			TRAVEL TIME (Tt)					Tc CHECK URBANIZED BASINS		Tc	Tlag	REMARKS
DESIG: (1)	DEV./EX. (D or E)	CN	K (2)	AREA Ac (3)	AREA MI^2	INITIAL LENGTH Feet (4)	SLOPE % (5)	Ti Min (6)	TRAVEL LENGTH Feet (7)	SLOPE % (8)	V1 VELOCITY FPS (9a)	V2 VELOCITY FPS (9b)	Tt Min (10)	TOTAL LENGTH Ft (11)	Tc = (L/180)+10 Min (12)	Min (13)	Tlag= 0.6Tc/60 Hours	
ON1	D	90.0	0.7980	13.96	0.02181	100	1.0	5.4	2270	2.3	3.0	4.6	9.2	2370	23.2	14.6	0.146	
ON2	D	90.0	0.7980	5.38	0.00841	100	1.0	5.4	1013	4.9	4.5	6.8	3.1	1113	16.2	8.6	0.086	
ON3	D	90.0	0.7980	12.07	0.01886	100	1.0	5.4	1666	4.9	4.5	6.8	4.7	1766	19.8	10.2	0.102	
ON4	D	87.6	0.7658	4.58	0.00716	100	1.0	6.0	840	4.7	4.4	6.6	2.8	940	15.2	8.8	0.088	
ON5	D	87.6	0.7658	0.82	0.00128	100	1.0	6.0	115	2.0	2.9	4.3	0.7	215	11.2	6.7	0.067	

A1 →

← A1

K = 0.0132 (CN) - 0.39

V1 applies to the first 500 feet of travel distance;
V2 applies to the remaining travel distance.

Existing V2 = 29.4*(S/100)^1/2

Developed V2 = 30.6*(S/100)^1/2

REFERENCE :

STANDARD FORM 4

```
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              MAY  1991                *
*            VERSION 4.0.1E             *
*      Lahey F77L-EM/32 version 5.01    *
*        Dodson & Associates, Inc.      *
*  RUN DATE  05/03/04  TIME  15:14:09   *
*****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET             *
*       DAVIS, CALIFORNIA 95616         *
*           (916) 551-1748              *
*                                       *
*****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X                X
XXXXXXX  XXXX     X        XXXXX   X
X     X  X        X                X
X     X  X        X     X          X
X     X  XXXXXXX   XXXXX          XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM


```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

              *DIAGRAM
    1         ID   ********************************************************************
    2         ID   * ..................................................................  *
    3         ID   * :       SUMMERLIN VILLAGE 24                                     :  *
    4         ID   * :       PARCEL A                                                 :  *
    5         ID   * :                                                                :  *
    6         ID   * :      PROPOSED CONDITIONS                                       :  *
    7         ID   * :      DEVELOPED ONSITE                                          :  *
    8         ID   * :                                                                :  *
    9         ID   * :................................................................:  *
   10         ID   * :              RETURN PERIOD_ _ _ _10/100-YEAR                   :  *
   11         ID   * :              DISTRIBUTUION_ _ _ _6-HOUR SDN3                   :  *
   12         ID   * :              PROJECT NO_ _ _ _ _ 62A.24.211                    :  *
   13         ID   * :              FILENAME_ _ _ _ _ _   PRO.H1                      :  *
   14         ID   * :              DATE_ _ _ _ _ _ _ _   4/08/04                     :  *
   15         ID   * :................................................................:  *
   16         ID
   17         ID        DEPTH AREA REDUCTION FACTOR
   18         ID                SQ MILES            DARF
   19         ID                   0-.1             1.0
   20         ID                 10-YEAR           .575
   21         ID
   22         IT       5       0       0     300
   23         IO       5
   24         IN       5       0       0
   25         JR    PREC       1    .575
              *

   26         KK     ON1
   27         KM   ONSITE SUBBASIN ON1
   28         KM             AREA    13.96 ACRES
   29         BA  .02181
   30         PB    3.34
   31         PC    .000    .020    .057    .070    .087    .108    .124    .130    .130    .130
   32         PC    .130    .130    .130    .133    .140    .142    .148    .158    .172    .181
   33         PC    .190    .197    .199    .200    .201    .204    .214    .229    .241    .249
   34         PC    .251    .256    .270    .278    .281    .283    .295    .322    .352    .409
   35         PC    .499    .590    .710    .744    .781    .812    .819    .835    .851    .856
   36         PC    .860    .868    .876    .888    .910    .926    .937    .950    .970    .976
   37         PC    .982    .985    .987    .989    .990    .993    .993    .994    .995    .998
   38         PC    .998    .999    1.00
   39         LS       0      90
   40         UD    .146
              *

   41         KK     ON2
   42         KM   ONSITE SUBBASIN ON2
   43         KM             AREA  5.38 ACRES
   44         BA  .00841
   45         LS       0      90
   46         UD   0.086
              *
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

   47         KK     CP1
   48         KM  CONCENTRATION POINT CP1
   49         KM  COMBINE ON1 AND ON2
   50         HC       2
              *
```

```
            51          KK     ON3
            52          KM   ONSITE SUBBASIN ON3
            53          KM            AREA  12.81 ACRES
            54          BA  .01886
            55          LS       0      90
            56          UD   0.102
                        *

            57          KK     ON5
            58          KM   ONSITE SUBBASIN ON5
            59          KM            AREA  0.82 ACRES
            60          BA  .00128
            61          LS       0    87.6
            62          UD   0.067
                        *

            63          KK     CP2
            64          KM  CONCENTRATION POINT CP2
            65          KM  COMBINE CP1, ON5, AND ON3
            66          HC       3
                        *

            67          KK     ON4
            68          KM   ONSITE SUBBASIN ON4
            69          KM            AREA   4.46 ACRES
            70          BA  .00716
            71          LS       0    87.6
            72          UD   0.088
                        *
            73          ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING           (---->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR         (<----) RETURN OF DIVERTED OR PUMPED FLOW

    26         ON1
                 .
                 .
    41           .          ON2
                 .            .
                 .            .
    47         CP1.............
                 .
                 .
    51           .          ON3
                 .            .
                 .            .
    57           .            .          ON5
                 .            .            .
                 .            .            .
    63         CP2.........................
                 .
                 .
    67           .          ON4

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*****************************************
 *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
 *              MAY   1991               *
 *            VERSION 4.0.1E             *
 *     Lahey F77L-EM/32 version 5.01     *
 *       Dodson & Associates, Inc.       *
 *  RUN DATE  05/03/04  TIME  15:14:09   *
 *****************************************

*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET             *
*       DAVIS, CALIFORNIA 95616         *
*           (916) 551-1748              *
*                                       *
*****************************************

*****************************************************************
* ............................................................. *
* :       SUMMERLIN VILLAGE 24                                : *
* :       PARCEL A                                            : *
* :                                                           : *
* :      PROPOSED CONDITIONS                                  : *
* :      DEVELOPED ONSITE                                     : *
* :                                                           : *
* :...........................................................: *
* :              RETURN PERIOD_ _ _ _10/100-YEAR              : *
* :              DISTRIBUTUION_ _ _ _6-HOUR SDN3              : *
* :              PROJECT NO_ _ _ _ _ 62A.24.211               : *
* :              FILENAME_ _ _ _ _ _   PRO.H1                 : *
* :              DATE_ _ _ _ _ _ _ _   4/08/04                : *
* :...........................................................: *
*****************************************************************

     DEPTH AREA REDUCTION FACTOR
            SQ MILES            DARF
               0-.1             1.0
             10-YEAR            .575

  23 IO          OUTPUT CONTROL VARIABLES
                       IPRNT          5  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL         0.  HYDROGRAPH PLOT SCALE

     IT          HYDROGRAPH TIME DATA
                       NMIN           5  MINUTES IN COMPUTATION INTERVAL
```

```
                IDATE      1     0  STARTING DATE
                ITIME         0000  STARTING TIME
                   NQ          300  NUMBER OF HYDROGRAPH ORDINATES
               NDDATE      2     0  ENDING DATE
               NDTIME         0055  ENDING TIME
               ICENT            19  CENTURY MARK

          COMPUTATION INTERVAL     0.08 HOURS
               TOTAL TIME BASE    24.92 HOURS

     ENGLISH UNI.
          DRAINAGE                SQUARE MILES
          PRECIPITA               INCHES
          LENGTH, EL              FEET
          FLOW                    CUBIC FEET PER SECOND
          STORAGE VOLU            ACRE-FEET
          SURFACE AREA            ACRES
          TEMPERATURE             DEGREES FAHRENHEIT

JP          MULTI-PLAN OPTION
                NPLAN            1  NUMBER OF PLANS

JR          MULTI-RATIO OPTION
                RATIOS OF PRECIPITATION
               1.00      0.57
1

          PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
                          FLOWS IN CUBIC FEET PER SECOND,  AREA IN SQUARE MILES
                                          TIME TO PEAK IN HOURS

                                                  RATIOS APPLIED TO PRECIPITATION
 OPERATION       STATION     AREA    PLAN          RATIO 1  RATIO 2
                                                     1.00     0.57

 HYDROGRAPH AT
+                  ON1       0.02     1   FLOW        41.      19.
                                          TIME       3.58     3.58

 HYDROGRAPH AT
+                  ON2       0.01     1   FLOW        18.       8.
                                          TIME       3.50     3.50

  2 COMBINED AT
+                  CP1       0.03     1   FLOW        56.      26.
                                          TIME       3.58     3.58

 HYDROGRAPH AT
+                  ON3       0.02     1   FLOW        38.      17.
                                          TIME       3.50     3.50

 HYDROGRAPH AT
+                  ON5       0.00     1   FLOW         3.       1.
                                          TIME       3.50     3.50

  3 COMBINED AT
+                  CP2       0.05     1   FLOW        95.      44.
                                          TIME       3.50     3.58

 HYDROGRAPH AT
+                  ON4       0.01     1   FLOW        14.       6.
                                          TIME       3.50     3.50

*** NORMAL END OF HEC-1 ***
```

A1

SUMMERLIN

SM

VILLAGE 24 PARCEL A IMPROVEMENTS

"SILVER CREEK"

CITY OF LAS VEGAS
STATE OF NEVADA
A.P.N. 164-03-111-001

DEVELOPER

The Howard Hughes Corporation SM
an affiliate of General Growth Properties, Inc.

HOWARD HUGHES PROPERTIES, INC.
A NEVADA CORPORATION
10000 W. CHARLESTON, SUITE 200
LAS VEGAS, NEVADA 89135
OFFICE PHONE NO. (702) 791-4300
OFFICE FAX NO. (702) 791-4450

ENGINEER

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
OFFICE: (702) 804-2000, FAX: (702) 804-2299
SUMMERLIN OFFICE 10000 CHARLESTON BLVD., STE. 130
OFFICE: (702) 804-2160, FAX: (702) 804-2295

APPROVALS

CLV PLANNING DEPARTMENT

THIS PLAN MEETS THE APPLICABLE STANDARDS OF THE PLANNING AND DEVELOPMENT DEPARTMENT

M. MARGO WHEELER, AICP, DIRECTOR OF PLANNING & DEVELOPMENT DATE

"APPROVAL OF THESE PLANS IS LIMITED TO THOSE IMPROVEMENTS CONSTRUCTED IN THE DEDICATED RIGHTS-OF-WAY AND / OR DEDICATED EASEMENTS. THIS APPROVAL DOES NOT AUTHORIZE THE CONSTRUCTION OF ANY IMPROVEMENTS THAT DEVIATE FROM ADOPTED STANDARDS AND / OR SPECIFICATIONS, EXCEPT THOSE SPECIFICALLY LISTED UNDER DEVIATIONS FROM STANDARD. THE ENGINEER SHALL RESOLVE ANY DEVIATION OTHER THAN THOSE LISTED IN DEVIATIONS FROM STANDARDS IN FAVOR OF THE UNIFORM STANDARD DRAWINGS AND SPECIFICATIONS CLARK COUNTY AREA NEVADA".

JORGE CERVATES, PE #13977, PTOE DATE
CITY ENGINEER
CITY OF LAS VEGAS, NEVADA

SUMMERLIN DESIGN REVIEW COMMITTEE

By: _____ DATE
JULIE CLEAVER

Title: DIRECTOR OF PLANNING AND DESIGN

BENCHMARK			
BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 05°59'55" WEST BEING THE BEARING OF THE WEST LINE OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA.

EMBARQ NEVADA DISCLAIMER

NOTE:
THE AFFIXED EMBARQ NEVADA APPROVAL DOES NOT ASSUME OR GUARUNTEE LIABILITY FOR KNOWN OR UNKNOWN CONFLICTS WITH EXISTING OR PROPOSED IMPROVEMENTS. RESOLUTION OF ANY CONFLICT WILL BE ACCOMPLISHED PURSUANT TO LOCAL ORDINANCES, NEVADA REVISED STATUTES AND/OR UTILITY COMMISION RULES AND REGULATIONS.

EMBARQ _____ REVIEWED BY _____ DATE

NEVADA POWER COMPANY DISCLAIMER

EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATIONS.

CALL BEFORE YOU DIG: 1(800)227-2600

NEVADA POWER Co. _____ REVIEWED BY _____ DATE

NEVADA POWER COMPANY ACKNOWLEDGES THAT WE HAVE RECEIVED YOUR PLANS AND WILL PROVIDE SERVICE TO ALL ELECTRICAL NEEDS ASSOCIATED WITH THIS PROJECT. NEVADA POWER COMPANY RESERVES THE RIGHT TO ADDRESS ANY EXISTING OR FUTURE CONFLICTS ONCE THE FINAL DESIGN IS COMPLETED. THE NEW SERVICE AND THE RESOLUTION OF ANY CONFLICTS WILL BE ACCOMPLISHED PURSUANT TO THE NEVADA PUBLIC UTILITY COMMISION'S RULES AND REGULATIONS.

LAS VEGAS VALLEY WATER DISTRICT PROJ # H109269 DATE
SHEETS (1-4, 10, 15-17, 20-22, 26-29)

CLV FIRE DEPARTMENT DATE

COX COMMUNICATIONS LAS VEGAS, INC. DATE

SOUTHWEST GAS CORP. DATE

SHEET 1 OF 33

CLV DRAWING NO. _____

STATE OF NEVADA — ENGINEER — BRIAN EDWARDS — No. 9353 — PROFESSIONAL — DATE: 3/19/07

REV.	DATE	DESCRIPTION	DATE AGEN. APP.	DATE GCW. APP.

DESIGN: BE
DRAWN: BE
CHECK: BE
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 08-30-06
PLOT TIME: 10:54:55

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299

L:\V24\PARCEL A\DWG\Vmps\V24-C001.dwg stephenmer

THE HOWARD HUGHES CORPORATION
SUMMERLIN VILLAGE 24 PARCEL A - SILVER CREEK
COVER SHEET

DRAWING
1
1 OF 33 SHTS

JOB NO. 62024.810

v24c2d0.dwg 03/09/14 wes

ROAD CONTROL CURVE TABLE				
CURVE	DELTA	RADIUS	LENGTH	TANGENT
C1	26°54'00"	465.50'	218.55'	111.33'
C27	18°52'08"	300.50'	98.96'	49.93'
C28	31°37'26"	6174.50'	347.42'	173.76'
C29	36°53'46"	300.50'	193.51'	100.24'
C30	55°20'05"	63.50'	61.33'	33.29'
C31	15°28'48"	300.50'	81.19'	40.84'

ROAD CONTROL LINE TABLE		
LINE	BEARING	DISTANCE
L16	S40°08'37"E	119.48'
L17	N49°51'23"E	22.00'
L18	S06°02'00"W	243.27'
L19	N83°58'02"W	184.50'
L29	N31°40'12"E	22.00'
L30	S39°21'20"E	50.11'
L31	S76°15'06"E	126.95'

Avoid hitting overhead power lines. It's costly.
CALL BEFORE YOU DO OVERHEAD
CALL 1-702-227-2929

Avoid cutting underground utility lines. It's costly.
Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE (USA)

EXISTING CROSSBRIDGE DR VILLAGE 24, UNIT 1 IMPROVEMENTS, INC. By GC WALLACE, INC. JOB NO. 62A.24.211 CLV DWG NO. 7944

EXISTING SKY VISTA DRIVE IMPROVEMENTS, SMRLN VILLAGE 23A, 24 By GC WALLACE, INC. JOB NO. 62A.24.220 CLV DWG NO. 107Y4292

VILLAGE 24 COMMUNITY PARK NP-1

VILLAGE 24 PARCEL D SF3

VILLAGE 23A PARCEL E SF3

CROSSBRIDGE DRIVE (PUBLIC)
MIDDLE CREEK ST (PUBLIC)
DESERT BRIDGE ST (PUBLIC)
CHERRY GLEN PLACE (PUBLIC)
RIVERLAWN PLACE (PUBLIC)
ELMSTONE PLACE (PUBLIC)
SKY VISTA DRIVE (PUBLIC)
DESERT MOON ROAD
COMMON LOT E

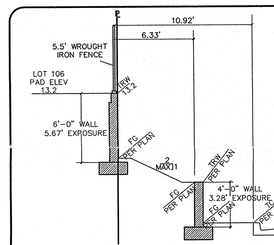
SEE SHEET 8
SEE SHEET 6

NORTH
SCALE 40 0 40 80 FEET

CONSTRUCTION NOTES

ROADWAY

1 R — INSTALL A.C. PAVEMENT PER TYPICAL STREET SECTIONS, SEE SHEET 9.
2 R — INSTALL 6" "L" TYPE CURB & GUTTER (S-47 SIS)
4 R — INSTALL "A" TYPE ISLAND CURB (S-50 SIS)
5 R — INSTALL 8' CROSS GUTTER (S-64 SIS)
6 R — INSTALL HANDICAP RAMP CURB DEPRESSION SEE PLAN AND PROFILES FOR RAMP DATA (235 USD 2 10)
7 R — CONSTRUCT 4' CONC. SIDEWALK SEE SECTIONS ON SHEET 9 (S-72 SIS)
8 R — CONSTRUCT WALKWAY UNDERDRAIN (D-31 SIS)



REAR RETAINING WALL with PLANTER @ LOT 106
N.T.S.

ENGINEER'S EVALUATION OF GRADING QUANTITIES

PLEASE NOTE THESE QUANTITIES ARE ESTIMATES ONLY. ACTUAL QUANTITIES MAY DIFFER FROM THE ESTIMATE DUE TO SOILS VARIATIONS IN THE FIELD. VOLUMES CALCULATED WITHOUT SHRINKAGE OR SUBSIDENCE FACTORS AND DO NOT INCLUDE OVEREXCAVATION REQUIRED FOR THE REMOVAL OF CALICHE OR ANY OTHER UNDESIRABLE MATERIALS. REFER TO THE SOILS REPORT FOR THESE AREAS. ALSO NOT INCLUDED ARE QUANTITIES FOR ADDITIONAL DITCHES & BERMS NOT SHOWN THAT MAY BE REQUIRED BY THE ENGINEER.

COMPUTED CUT VOLUME: 64,802 cys
COMPUTED FILL VOLUME: 210,818 cys
IMPORT: 146,016 cys

DRAINAGE CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED DRAINAGE STUDY D53592 ON FILE AT CLV.

BERT A HUGHES, PE NO. 10259 DATE

NOTE

THIS SET OF DRAWINGS IS BASED UPON NAVD 88 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

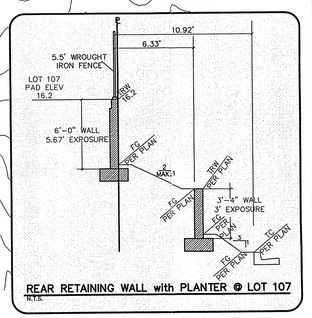
BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

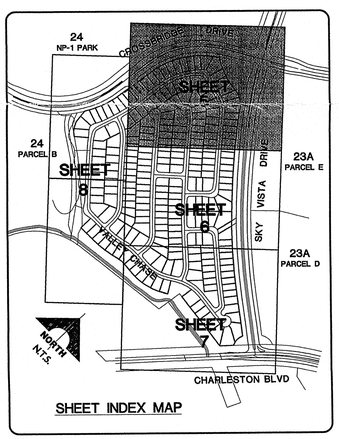
BASIS OF BEARINGS

NORTH 05°59'55" WEST BEING THE BEARING OF THE WEST LINE OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA.

Call before you UnderGround
1-702-455-7511
1-702-229-6611



REAR RETAINING WALL with PLANTER @ LOT 107
N.T.S.



SHEET INDEX MAP

CLV DRAWING NO.

STATE OF NEVADA — BERT A. HUGHES — No. 10259 — PROFESSIONAL ENGINEER — DATE: 10/04/07

REV	DATE	DESCRIPTION	DATE: AGEN. APP	DATE: GOVN. APP

DESIGN: BE
DRAWN: BE
CHECK: BE
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 09-30-06
PLOT TIME: 10:55:29

G. C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
stephenmer
L:\624\PARCEL A\DWG\vmps\V624d05.dwg

THE HOWARD HUGHES CORPORATION
SUMMERLIN VILLAGE 24 PARCEL A - SILVER CREEK
GRADING PLAN I

DRAWING 5
5 OF 33 SHTS

JOB NO. 62024.810

dw=A3B.dwg 030824.wdt

SEE SHEET 5

SEE SHEET 8

SEE SHEET 7

HAVEN OAKS PLACE (PUBLIC)

CHERRY GLEN (PUBLIC)

RIVERLAWN PLACE (PUBLIC)

ELMSTONE PLACE (PUBLIC)

BRUCKNER LN. (PUBLIC) 0.83% L15 0.66% 9.71%

KEYPORT LN. (PUBLIC) 0.60% 1.78% 2.32%

FANWOOD LN. (PUBLIC)

VALLEY CHASE AVE. (PUBLIC)

SKY VISTA DRIVE (PUBLIC)

VILLAGE 23A PARCEL E SF3

VILLAGE 23A PARCEL D SF3

EXISTING SKY VISTA DRIVE IMPROVEMENTS By GC WALLACE, INC. JOB NO. 62A.24.220 CLV DWG NO. 107V4292

30' WIDE PUBLIC DRAINAGE ESMT & COMMON LOT TO BE PRIVATELY MAINTAINED BY HOA

INSTALL CLV THRU LOT DRAIN GATE PER USD 421B

INSTALL CONC BOLLARDS PER USD 421A

CONSTRUCTION NOTES

ROADWAY

(A/R) INSTALL A.C. PAVEMENT PER TYPICAL STREET SECTIONS, SEE SHEET 9.

(B/R) INSTALL 6" "L" TYPE CURB & GUTTER (S-47 SIS)

(C/R) INSTALL 8' CROSS GUTTER (S-64 SIS)

(D/R) INSTALL HANDICAP RAMP CURB DEPRESSION SEE PLAN AND PROFILES FOR RAMP DATA (235 USD) (2 10)

(E/R) CONSTRUCT 4' CONC. SIDEWALK SEE SECTIONS ON SHEET 9 (S-72 SIS)

(F/R) CONSTRUCT WALKWAY UNDERDRAIN (D-31 SIS)

STORM DRAIN

(SD) INSTALL TYPE I 60" ACCESS STORM DRAIN MANHOLE (403 USD)

(SD) INSTALL TYPE II STORM DRAIN MANHOLE (405 USD)

(SD) INSTALL TYPE "CM" DROP INLET (1 10)

STORM DRAIN CONTROL TABLE		
LINE	BEARING	DISTANCE
SD-L25	N55°13'59"W	58.68'
SD-L28	N47°57'45"W	225.89'
SD-L29	N43°10'00"E	241.46'

ROAD CONTROL LINE TABLE		
LINE	BEARING	DISTANCE
L1	S00°00'00"E	84.63'
L2	S44°17'55"E	50.01'
L3	S90°00'00"E	176.55'
L7	S41°19'38"E	50.00'
L8	S04°56'43"W	63.29'
L9	S46°24'16"E	50.39'
L13	S85°03'17"E	85.10'
L14	N76°36'08"E	50.00'
L24	S42°34'46"E	50.00'
L25	S44°22'50"W	166.82'
L27	S48°33'40"E	50.00'
L28	N43°10'00"E	137.09'

ROAD CONTROL CURVE TABLE				
CURVE	DELTA	RADIUS	LENGTH	TANGENT
C2	44°17'55"	150.50'	116.36'	61.26'
C3	13°23'52"	500.00'	116.92'	58.73'
C10	2°58'17"	6842.50'	354.86'	177.42'
C11	51°20'59"	150.50'	134.88'	72.35'
C14	18°20'35"	300.00'	96.04'	48.44'
C15	1°56'38"	5042.83'	171.08'	85.55'
C16	4°19'01"	6614.50'	498.38'	249.31'
C20	72°42'21"	48.50'	61.54'	35.70'
C21	77°06'25"	48.50'	65.27'	38.65'
C22	9°51'11"	300.50'	51.68'	25.90'
C23	4°37'52"	4820.83'	389.65'	194.93'
C24	9°12'53"	300.50'	48.33'	24.22'
C25	6°21'07"	300.50'	33.31'	16.67'
C26	4°59'59"	6392.50'	557.82'	279.09'
C28	3°13'26"	6174.50'	347.42'	173.76'

ENGINEER'S EVALUATION OF GRADING QUANTITES

PLEASE NOTE THESE QUANTITIES ARE ESTIMATES ONLY. ACTUAL QUANTITIES MAY DIFFER FROM THE ESTIMATE DUE TO SOILS VARIATIONS IN THE FIELD. VOLUMES CALCULATED WITHOUT SHRINKAGE OR SUBSIDENCE FACTORS AND DO NOT INCLUDE OVEREXCAVATION REQUIRED FOR THE REMOVAL OF CALICHE OR ANY OTHER UNDESIRABLE MATERIALS. REFER TO THE SOILS REPORT FOR THESE AREAS. ALSO NOT INCLUDED ARE QUANTITIES FOR ADDITIONAL DITCHES & BERMS NOT SHOWN THAT MAY BE REQUIRED BY THE ENGINEER.

COMPUTED CUT VOLUME: 64,802 cys
COMPUTED FILL VOLUME: 210,818 cys
IMPORT: 146,016 cys

DRAINAGE CERTIFICATION

I CERTIFY TAHT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPORVED DRAINAGE STUDY D53592 ON FILE AT CLV.

BERT A. HUGHES, PE NO. 10259 DATE

NOTE

THIS SET OF DRAWINGS IS BASED UPON NAVD 88 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

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AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY
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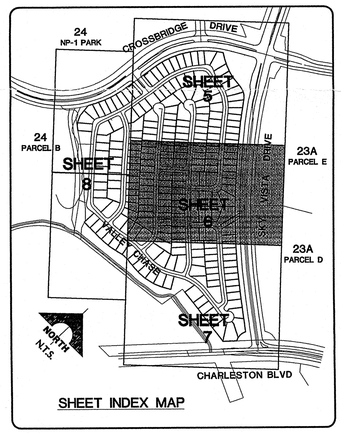
UNDERGROUND SERVICE (USA)

CALL BEFORE YOU DIG UNDERGROUND
Call before you UnderGround
1-702-455-7511
1-702-229-6611

SCALE 40 0 40 80 FEET

SHEET INDEX MAP



CLV DRAWING NO.

G. C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE (702) 804-2000 • FAX: (702) 804-2299
L:\V24\P-PARCEL A\DWG's\misc\V24C006.dwg stephenmel

THE HOWARD HUGHES CORPORATION
SUMMERLIN VILLAGE 24 PARCEL A - SILVER CREEK
GRADING PLAN II

DRAWING 6
6 OF 33 SHTS

JOB NO. 62024810

DESIGN: BE	DESCRIPTION	DATE
DRAWN: BE		
CHECK: BE		
ISSUE DATE:		
ISSUE EDITOR:		
PLOT DATE: 09-30-06		
PLOT TIME: 10:56:06		

DATE AGEN. APP. DATE CONV. APP.

STATE OF NEVADA — BERT A. HUGHES — No. 10259 — REGISTERED PROFESSIONAL ENGINEER — CIVIL — 9-30-06

24258.dwg 030621e.ctb

SEE SHEET 6

SEE SHEET 8

COMMON LOT B AND DRAINAGE EASEMENT

RIVERLAWN PLACE (PUBLIC)

GLENHAVEN PLACE (PUBLIC)

SKY VISTA DRIVE (PUBLIC)

VALLEY CHASE AVE (PUBLIC)

EXISTING SKY VISTA DRIVE IMPROVEMENTS BY GC WALLACE, INC. DOB NO. 62A.24-220 CLV DWG NO. 10714292

VILLAGE 23A PARCEL D SF3

COMMON LOT H

20' PUBLIC DRAINAGE ESM'T & COMMON LOT TO BE PRIVATELY MAINTAINED BY HOA

EMERGENCY ACCESS & PUBLIC DRAINAGE ESM'T & COMMON LOT TO BE PRIVATELY MAINTAINED BY HOA

PUBLIC DRAINAGE ESM'T & ACCESS ROAD TO BE PRIVATELY MAINTAINED

12" PVC SD SEE DETAIL THIS SHEET.

RED ROCK CONSERVATION AREA

NDOT R/W

EXISTING GRADE

PROPOSED RIPRAP

EXISTING RIPRAP

EXISTING ACCESS ROAD

EXISTING CONCRETE CHANNEL

MATCH EX. SURFACE UNDER BRIDGE.

CHARLESTON BLVD. PUBLIC

68 PAD=62.7 F.F.= 63.4
67 PAD=59.2 F.F.= 59.9
66 PAD=55.6 F.F.= 56.3
65 PAD=52.9 F.F.= 53.6
64 PAD=50.3 F.F.= 51.0
63 PAD=47.8 F.F.= 48.5
62 PAD=45.4 F.F.= 46.1
61 PAD=43.4 F.F.= 44.1
60 PAD=43.6 F.F.= 44.3
59 PAD=41.7 F.F.= 42.5
58 PAD=39.3 F.F.= 40.0
57 PAD=36.9 F.F.= 37.6
56 PAD=34.4 F.F.= 35.1
55 PAD=32.4 F.F.= 33.1
54 PAD=32.1 F.F.= 32.8
53 PAD=31.7 F.F.= 32.4
52 PAD=37.3 F.F.= 38.0
51 PAD=39.3 F.F.= 40.0
50 PAD=41.5 F.F.= 42.2
49 PAD=43.7 F.F.= 44.4
48 PAD=45.8 F.F.= 46.5
47 PAD=48.0 F.F.= 48.7
46 PAD=50.1 F.F.= 50.8
45 PAD=52.3 F.F.= 53.0
44 PAD=54.5 F.F.= 55.2
43 PAD=56.8 F.F.= 57.5
182 PAD=59.5 F.F.= 60.2
181 PAD=57.9 F.F.= 58.6
180 PAD=47.6 F.F.= 48.3
179 PAD=43.6 F.F.= 44.3
178 PAD=42.0 F.F.= 42.7
177 PAD=55.2 F.F.= 55.9
176 PAD=51.7 F.F.= 52.4
175 PAD=48.2 F.F.= 48.9
174 PAD=45.1 F.F.= 45.8
173 PAD=43.7 F.F.= 44.4
172 PAD=45.8 F.F.= 46.5
171 PAD=47.9 F.F.= 48.6
170 PAD=50.0 F.F.= 50.7
169 PAD=52.1 F.F.= 52.8
168 PAD=54.2 F.F.= 54.9
167 PAD=56.6 F.F.= 57.3
163 PAD=53.5 F.F.= 54.2
162 PAD=56.9 F.F.= 57.6

NORTH

SCALE 1" = 40' (−40, 0, 40, 80 FEET)

ROAD CONTROL LINE TABLE		
LINE	BEARING	DISTANCE
L8	S04°56'43"W	63.29'
L10	S25°02'56"E	59.48'
L11	S49°05'30"E	55.21'
L12	N58°18'00"E	66.56'
L13	S85°03'17"E	85.10'
L20	S07°13'54"W	22.00'
L21	S07°13'54"W	46.94'
L22	S53°04'23"E	36.24'
L23	S82°46'06"E	250.24'

STORM DRAIN CONTROL TABLE		
LINE	BEARING	DISTANCE
SD−L1	N25°02'56"W	121.61'
SD−L2	N47°57'45"W	45.41'
SD−L4	S04°56'43"W	57.89'
SD−L5	S04°56'43"W	28.25'
SD−L12	S89°45'26"E	74.84'
SD−L13	S85°03'17"E	104.00'
SD−L14	N82°11'32"E	82.11'
SD−L15	N68°08'38"E	74.73'
SD−L16	N58°18'00"E	73.23'
SD−L17	S72°12'35"W	20.59'
SD−L18	S12°02'15"W	22.16'
SD−L20	N61°41'40"W	21.37'
SD−L21	N01°35'24"W	21.08'
SD−L22	S00°12'41"W	61.05'
SD−L23	S00°12'41"W	120.78'
SD−L24	S73°45'04"E	48.87'
SD−L27	S36°55'37"W	55.11'

ROAD CONTROL CURVE TABLE				
CURVE	DELTA	RADIUS	LENGTH	TANGENT
C11	51°20'59"	150.50'	134.88'	72.35'
C12	24°02'34"	150.50'	63.15'	32.05'
C13	36°38'43"	300.00'	191.87'	99.35'
C14	18°20'35"	300.00'	96.04'	48.44'
C17	4°30'43"	4603.50'	362.53'	181.36'
C18	60°18'16"	31.50'	33.15'	18.30'
C19	38°55'53"	300.00'	203.84'	106.03'

ENGINEER'S EVALUATION OF GRADING QUANTITES

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COMPUTED FILL VOLUME: 210,818 cys
IMPORT: 146,016 cys

DRAINAGE CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED DRAINAGE STUDY D53592 ON FILE AT CLV.

BERT A. HUGHES, PE NO. 10259 DATE

NOTE

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BENCHMARK

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CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

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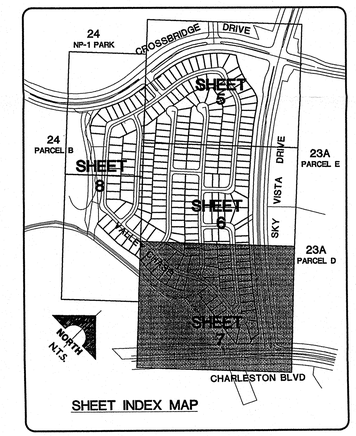


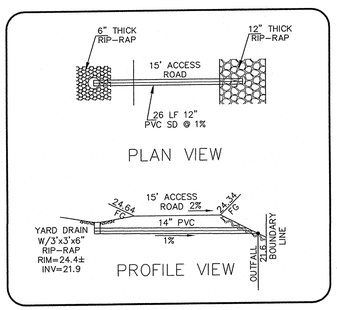
SHEET INDEX MAP

CLV DRAWING NO.

Call before you UnderGround 1-702-455-7511 1-702-229-6611

Avoid hitting overhead power lines. It's costly. CALL BEFORE YOU DO OVERHEAD CALL 1-702-227-2929

Avoid cutting underground utility lines. It's costly. Call before you Dig. 1-800-227-2600 UNDERGROUND SERVICE (USA)



CONSTRUCTION NOTES

ROADWAY

(1/R) INSTALL A.C. PAVEMENT PER TYPICAL STREET SECTIONS, SEE SHEET 9.
(2/R) INSTALL 6" "L" TYPE CURB & GUTTER (S-47 SIS)
(5/R) INSTALL 8' CROSS GUTTER (S-64 SIS)
(6/R) INSTALL HANDICAP RAMP CURB DEPRESSION SEE PLAN AND PROFILES FOR RAMP DATA (235 USD) (2/10)
(7/R) CONSTRUCT 4' CONC. SIDEWALK SEE SECTIONS ON SHEET 9 (S-72 SIS)

STORM DRAIN

(31/SD) INSTALL TYPE III STORM DRAIN MANHOLE (406 USD)
(32/SD) INSTALL TYPE II STORM DRAIN MANHOLE (405 USD)
(33/SD) INSTALL TYPE "CM" DROP INLET (1/10)
(34/SD) INSTALL TEMPORARY PLUG
(35/SD) CONCRETE HEADWALL (R-25.2 NDOT)

ENGINEER - STATE OF NEVADA — BERT A. HUGHES — No. 10259 — CIVIL — ON PROFESSIONAL — DATE: 06/30/2000

REV	DATE	DESCRIPTION	DATE: APPR.	APP'D	DATE: CKD.	APP'D

DESIGN: BE
DRAWN: BE
CHECK: BE
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 08-30-06
PLOT TIME: 10:56:41

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE (702) 804-2000 • FAX: (702) 804-2001 • dtf@gcwallace.com

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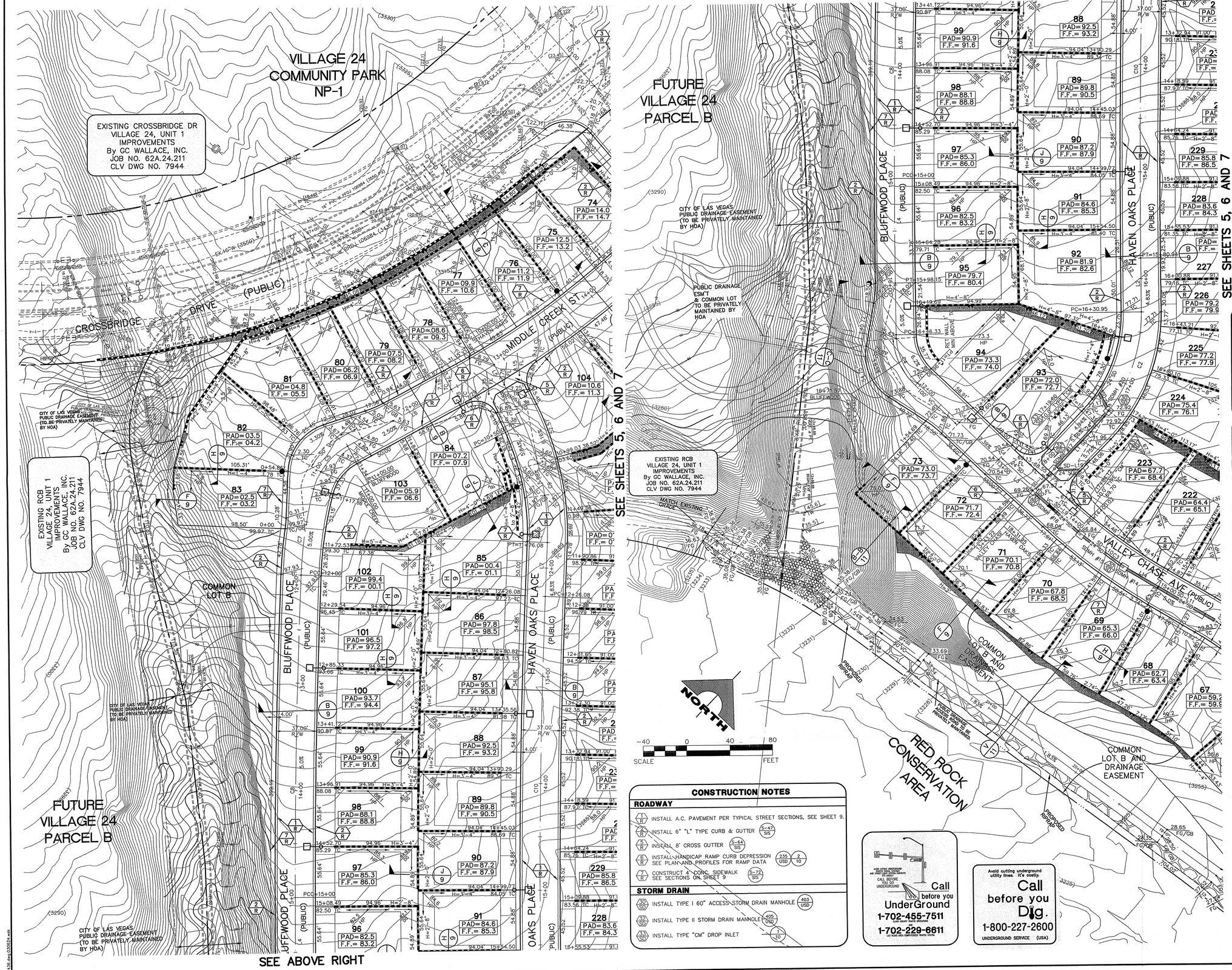
THE HOWARD HUGHES CORPORATION
SUMMERLIN VILLAGE 24 PARCEL A - SILVER CREEK
GRADING PLAN III

DRAWING 7
7 OF 33 SHTS

JOB NO. 62024.810

pw:2436.dwg:030624:wrk



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- (3) INSTALL 8' CROSS GUTTER (S-64 SIS)
- (4 R) INSTALL HANDICAP RAMP CURB DEPRESSION SEE PLAN AND PROFILES FOR RAMP DATA (235 USD) (2 10)
- (5 R) CONSTRUCT 4" CONC. SIDEWALK SEE SECTIONS ON SHEET 9 (S-72 SIS)

STORM DRAIN

- (6) INSTALL TYPE I 60" ACCESS STORM DRAIN MANHOLE (403 USD)
- (6) INSTALL TYPE II STORM DRAIN MANHOLE (405 USD)
- (7) INSTALL TYPE "CM" DROP INLET (1 10)

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CALL 1-702-227-2929

Call before you UnderGround 1-702-455-7511 1-702-229-6611

Avoid cutting underground utility lines. It's costly.
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UNDERGROUND SERVICE (USA)

STORM DRAIN CONTROL TABLE		
LINE	BEARING	DISTANCE
SD-L6	S71°10'49"E	21.18'
SD-L7	S00°46'18"E	73.87'
SD-L8	S00°00'00"E	28.04'
SD-L9	S90°00'00"E	60.78'
SD-L10	N84°04'50"E	50.00'
SD-L11	N76°36'08"E	115.41'

ROAD CONTROL LINE TABLE		
LINE	BEARING	DISTANCE
L1	S00°00'00"E	84.63'
L2	S44°17'55"E	50.01'
L3	S90°00'00"E	176.55'
L4	S44°27'38"E	48.18'
L5	S70°09'00"E	50.07'
L6	N18°02'58"E	108.92'
L7	S41°19'38"E	50.00'
L14	N76°36'08"E	50.00'

ROAD CONTROL CURVE TABLE				
CURVE	DELTA	RADIUS	LENGTH	TANGENT
C2	44°17'55"	150.50'	116.36'	61.26'
C3	13°23'52"	500.00'	116.92'	58.73'
C4	45°32'22"	63.50'	50.47'	26.65'
C5	47°31'53"	63.50'	52.68'	27.96'
C6	12°00'58"	834.50'	175.01'	87.83'
C7	11°45'05"	400.50'	82.14'	41.22'
C8	3°13'38"	7068.50'	398.15'	199.13'
C9	28°49'22"	250.50'	126.01'	64.37'
C10	2°58'17"	6842.50'	354.86'	177.47'

ENGINEER'S EVALUATION OF GRADING QUANTITES

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BERT A. HUGHES, PE NO. 10259 DATE

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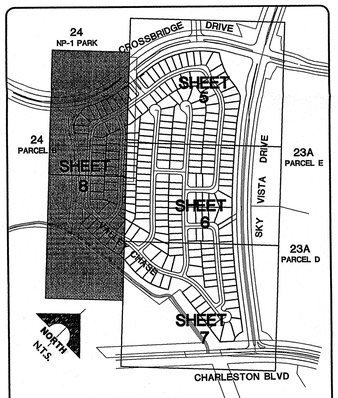

SHEET INDEX MAP

ENGINEER, STATE OF NEVADA, BERT A. HUGHES, No. 10259, PROFESSIONAL, CIVIL, 06/30/2020

DESIGN: BE
DRAWN: BE
CHECK: BE
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 08-30-06
PLOT TIME: 10:57:34

DATE: | DESCRIPTION | REV. | DATE | DATE: | AGEN. APP | DATE: | CCW. APP.

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
stephen@gcwallace.com
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THE HOWARD HUGHES CORPORATION
SUMMERLIN VILLAGE 24 PARCEL A - SILVER CREEK
GRADING PLAN IV

DRAWING 8
8 OF 33 SHTS

JOB NO. 62024.810

CLV DRAWING NO.

UPDATE #2
TO THE
TECHNICAL DRAINAGE STUDY
FOR
SUMMERLIN VILLAGE 24
UNIT 1 IMPROVEMENTS
INCLUDING
PARCELS "A" & "B" MASS GRADING

62A.24.211

February 2006

Prepared for:

The Howard Hughes Corporation
a Delaware Corporation
10000 West Charleston Blvd., Ste. 200
Las Vegas, Nevada 89135
Phone: (702) 791- 4300
Fax: (702) 791- 4453

G. C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS

WLM. 27.41

RECEIVED
MAR 24 2006
G.C. WALLACE

CITY OF LAS VEGAS
INTER-OFFICE MEMORANDUM

DATE: March 20, 2006

TO:
Land Development Services
Department of Public Works

FROM:
Albert Sung, P.E.
Flood Control Project Engineer
Department of Public Works

SUBJECT: Technical Drainage Study for:
SMRLN V24 Unit 1 Improvements including Parcels A & B Mass Grading – Update #2

COPIES TO:
G. C. Wallace, Inc.

Cross Streets:	NWC of Sky Vista Dr. & Charleston Blvd.		Howard Hughes Corp.
File Number:	F:\Depot\DSMEMOS\DS3551E.doc		Bart Anderson, P.E., DevCo
Parcel Number:	137-22-000-013		CCRFCD
Zoning Action:			
FEMA Flood Zone	YES	NO X	
Proposed Storm Drain	YES X	NO	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Trn. No.
1st Submittal	4/5/2004	4/19/2004	Not Approved	$400.00	122481: $400
2nd Submittal	5/27 & 6/18/2004	6/21/2004	Conditional Approval	$400.00	126058: $400
CCRFCD	8/6/2004	8/16/2004	Concurrence	N/C	N/C
3rd Submittal	12/8/2004	12/22/2004	Approved	$100.00	13371: $100
4th Submittal	2/28/2006 & 3/17/2006	3/20/2006	See Comments Below	$100.00	39635: $100
			TOTAL FEES (LDDRS):	**$1,000.00**	----

REMARKS:

3rd Submittal: Update to Extend Full Street Improvements of Crossbridge Drive from Station 80+50 to Station 68+00 to cover the frontage of Parcel B

4th Submittal: Update #2 to Validate the previous approval because that was more than a year ago

The Drainage Study for the subject project has been reviewed and:

X	is approved subject to conformance to all City standards and the following conditions:
	must be resubmitted or supplemented including the following:
	is conditionally approved subject to Clark County Regional Flood Control District concurrence.

The following comments are repeated until they are complete:

1. *The plan and profile sheets show that street improvements, storm drain, earthen berms and channels are to be constructed. The flood control facilities will be considered interim until the full improvements for Crossbridge Drive are constructed. The Howard Hughes Corporation is required to maintain the interim drainage facilities until the improvements are accepted by the City of Las Vegas. The City does not accept interim facilities for maintenance.*
2. *The proposed Berm 1 and Berm 2 (Figure 7) must be bonded for construction. Prior to final plan approval the developer must complete a Maintenance and Liability Agreement for the interim drainage improvements (off-site berms) and post a minimum maintenance bond of **$25,000.00**.*

P.01

TRANSACTION REPORT

MAR-20-2006 MON 01:25 PM

FOR: CITY OF LAS VEGAS 7023828551

SEND

DATE	START	RECEIVER	TX TIME	PAGES	TYPE	NOTE	M#	DP
MAR-20	01:24 PM	8042297	29"	2	FAX TX	OK	830	

TOTAL : 29S PAGES: 2

Once the drainage study is conditionally approved, the engineer should contact the City's Land Development Section (229-6371) to begin the agreement process.

3. *All proposed public drainage easements (privately maintained) must be dedicated in the Unit 1 improvements final map.*
4. *Pad elevations will be reviewed upon submittal of individual parcel improvement plans.*

NOTE: Please be advised that all land surface area disturbances over 1 acre or any area adjacent to a water way must submit to the Nevada Division of Environmental Protection a "Notice of Intent" to discharge that certifies a stormwater pollution prevention plan has been developed and is maintained on site; for inclusion in the Stormwater General Permit No. NVR100000. A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. For more information, including forms and applications see http://ndep.nv.gov/bwpc/storm01.htm or call (775) 687-9429.

NOTE: Any future changes to the proposed design (or design assumptions) as outlined in the approved drainage study and attached preliminary grading plan which affect drainage must be addressed in a Drainage Study Amendment and accepted by the City of Las Vegas Flood Control Section. Additionally, conditional acceptance of a drainage study is valid for a period of one (1) year. If the proposed construction has not been completed in that time period, the City of Las Vegas reserves the right to require additional conditions and/or submission and acceptance of a complete drainage study update prior to further construction of a project.

END OF REMARKS
B&H/ays

T/R/S: T20S/R59E/34
AREA K-34

File: PRO-SF4.wb2 03/29/04

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

TIME OF CONCENTRATION

G.C. Wallace, Inc.
File: SF4.WB2
Project No.: 62A.24.211

SUMMERLIN VILLAGE 24
STONEBRIDGE DRIVE PHASE 1 IMPROVEMENTS
PROPOSED CONDITIONS

BY: CJK
DATE: 03/29/04

SUB-BASIN DATA						INITIAL / OVERLAND TIME (Ti)			TRAVEL TIME (Tt)					Tc CHECK URBANIZED BASINS		Tc	Tlag	REMARKS
DESIG: (1)	DEV./EX. (D or E)	CN	K (2)	AREA Ac (3)	AREA MI^2	INITIAL LENGTH Feet (4)	SLOPE % (5)	Ti Min (6)	TRAVEL LENGTH Feet (7)	SLOPE % (8)	V1 VELOCITY FPS (9a)	V2 VELOCITY FPS (9b)	Tt Min (10)	TOTAL LENGTH Ft (11)	Tc = (L/180)+10 Min (12)	Min (13)	Tlag= 0.6Tc/60 Hours	
SB1	D	94.0	0.8508	3.99	0.00623	60	2.0	2.8	1650	5.9	4.9	7.4	4.3	1710	19.5	7.1	0.071	
SB2	D	94.0	0.8508	1.29	0.00202	60	2.0	2.8	414	2.1	2.9	4.5	2.3	474	12.6	5.1	0.051	
SB3	D	94.0	0.8508	3.54	0.00553	60	2.0	2.8	1098	1.4	2.4	3.7	6.2	1158	16.4	8.9	0.089	
SB4	D	94.0	0.8508	1.28	0.00200	60	2.0	2.8	365	2.7	3.3	5.0	1.8	425	12.4	4.6	0.046	USE 0.05 MIN

Ti = 1.8 (1.1 - K) L^1/2 / S^1/3

K = 0.0132 (CN) - 0.39

V1 applies to the first 500 feet of travel distance;
V2 applies to the remaining travel distance.

Existing V2 = 29.4*(S/100)^1/2

Developed V2 = 30.6*(S/100)^1/2

REFERENCE :

STANDARD FORM 4

060320 - Unit 1 Mass Grading / HA 242.2.pds

```
*                                                                                *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)                                            *
*             JUN   1998                                                         *
*           VERSION 4.1                                                          *
*                                                                                *
*  RUN DATE   29MAR04  TIME  11:45:46                                            *
*                                                                                *
**********************************************************************************

*                                                                                *
*    U.S. ARMY CORPS OF ENGINEERS                                                *
*    HYDROLOGIC ENGINEERING CENTER                                               *
*            609 SECOND STREET                                                   *
*         DAVIS, CALIFORNIA 95616                                                *
*            (916) 756-1104                                                      *
*                                                                                *
**********************************************************************************

X     X  XXXXXXX   XXXXX          X
X     X  X         X     X        XX
X     X  X         X              X
XXXXXXX  XXXX      X        XXXXX X
X     X  X         X              X
X     X  X         X     X        X
X     X  XXXXXXX   XXXXX          XXX

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL   LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1                                          HEC-1 INPUT                                                    PAGE  1

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

              *DIAGRAM
  1           ID   ***********************************************************
  2           ID   * ..................................................... *
  3           ID   * :       SUMMERLIN VILLAGE 24                         : *
  4           ID   * :       UNIT 1 IMPROVEMENTS                          : *
  5           ID   * :                                                    : *
  6           ID   * :      PROPOSED CONDITIONS                           : *
  7           ID   * :      DEVELOPED ONSITE                              : *
  8           ID   * :                                                    : *
  9           ID   * :.................................................... *
 10           ID   * :              RETURN PERIOD_ _ _ _10/100-YEAR       : *
 11           ID   * :              DISTRIBUTUION_ _ _ _ _6-HOUR SDN3     : *
 12           ID   * :              PROJECT NO_ _ _ _ _ 62A.24.211        : *
 13           ID   * :              FILENAME_ _ _ _ _ _   PRO.H1          : *
 14           ID   * :              DATE_ _ _ _ _ _ _ _   2/25/04         : *
 15           ID   * :.................................................... *
 16           ID
 17           ID        DEPTH AREA REDUCTION FACTOR
 18           ID                SQ MILES            DARF
 19           ID                   0-.1             1.0
 20           ID                 10-YEAR           .575
 21           ID
 22           IT       5       0       0     300
 23           IO       5
 24           IN       5       0       0
 25           JR    PREC       1    .575
              *

 26           KK     SB1
 27           KM   ONSITE SUBBASIN SB1
 28           KM            AREA       ACRES
 29           BA  .00623
 30           PB    3.34
 31           PC    .000    .020    .057    .070    .087    .108    .124    .130    .130    .130
 32           PC    .130    .130    .130    .133    .140    .142    .148    .158    .172    .181
 33           PC    .190    .197    .199    .200    .201    .204    .214    .229    .241    .249
 34           PC    .251    .256    .270    .278    .281    .283    .295    .322    .352    .409
 35           PC    .499    .590    .710    .744    .781    .812    .819    .835    .851    .856
 36           PC    .860    .868    .876    .888    .910    .926    .937    .950    .970    .976
 37           PC    .982    .985    .987    .989    .990    .993    .993    .994    .995    .998
 38           PC    .998    .999   1.00
 39           LS       0      94
 40           UD    .071
              *

 41           KK     SB2
 42           KM   ONSITE SUBBASIN SB2
 43           KM            AREA   ACRES
 44           BA  .00202
 45           LS       0      94
 46           UD   0.051
              *

1                                          HEC-1 INPUT                                                    PAGE  2

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 47           KK     CP1
 48           KM  CONCENTRATION POINT CP1
 49           KM  COMBINE SB1 AND SB2
 50           HC       2
              *
```

NORTH

GRAPHIC SCALE

100 0 50 100

(IN FEET)

1 inch = 100 ft.

LEGEND

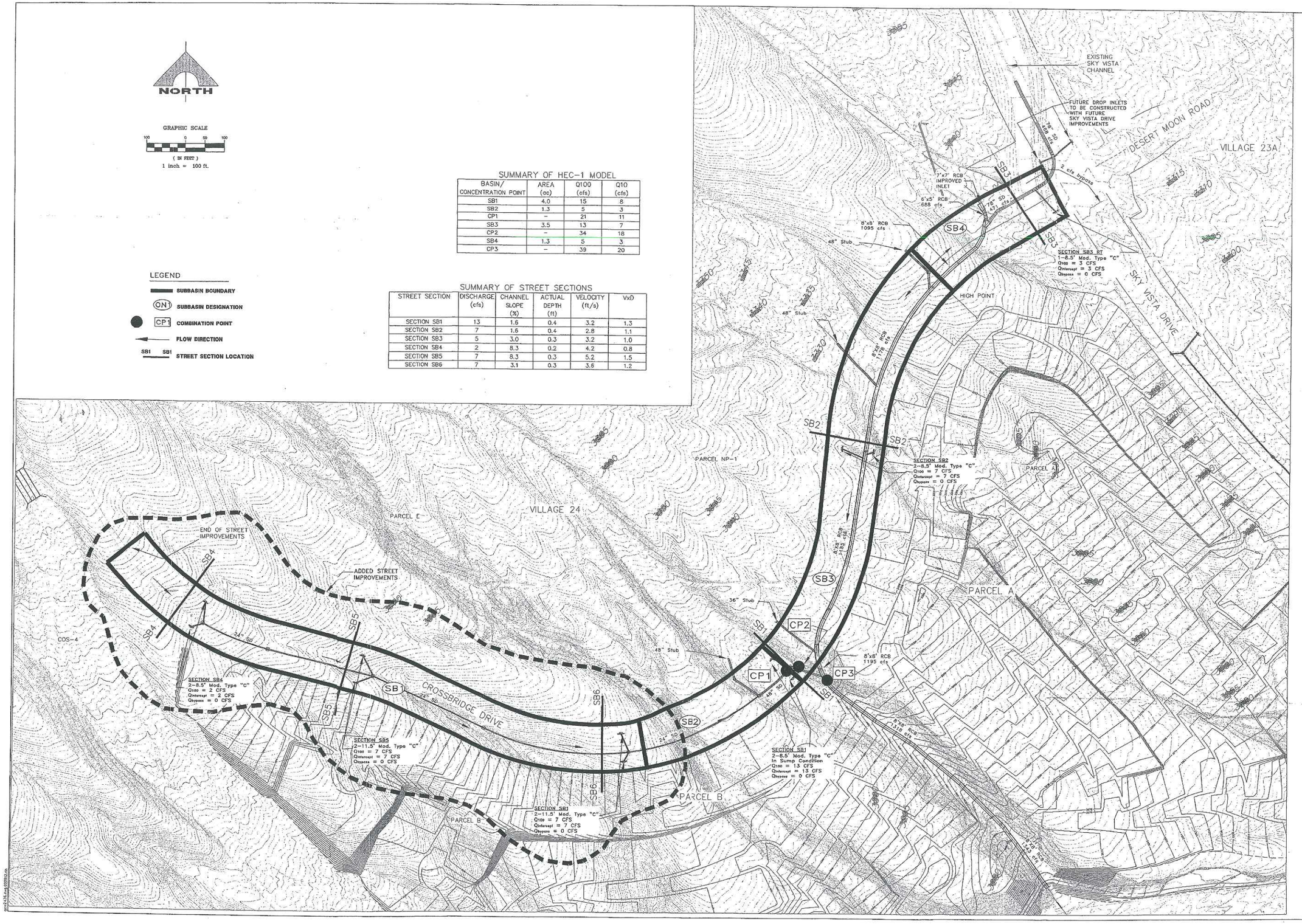
- SUBBASIN BOUNDARY
- (ON) SUBBASIN DESIGNATION
- CP1 COMBINATION POINT
- FLOW DIRECTION
- SB1 SB1 STREET SECTION LOCATION

SUMMARY OF HEC-1 MODEL

BASIN/ CONCENTRATION POINT	AREA (ac)	Q100 (cfs)	Q10 (cfs)
SB1	4.0	15	8
SB2	1.3	5	3
CP1	–	21	11
SB3	3.5	13	7
CP2	–	34	18
SB4	1.3	5	3
CP3	–	39	20

SUMMARY OF STREET SECTIONS

STREET SECTION	DISCHARGE (cfs)	CHANNEL SLOPE (%)	ACTUAL DEPTH (ft)	VELOCITY (ft/s)	VxD
SECTION SB1	13	1.6	0.4	3.2	1.3
SECTION SB2	7	1.6	0.4	2.8	1.1
SECTION SB3	5	3.0	0.3	3.2	1.0
SECTION SB4	2	8.3	0.2	4.2	0.8
SECTION SB5	7	8.3	0.3	5.2	1.5
SECTION SB6	7	3.1	0.3	3.6	1.2



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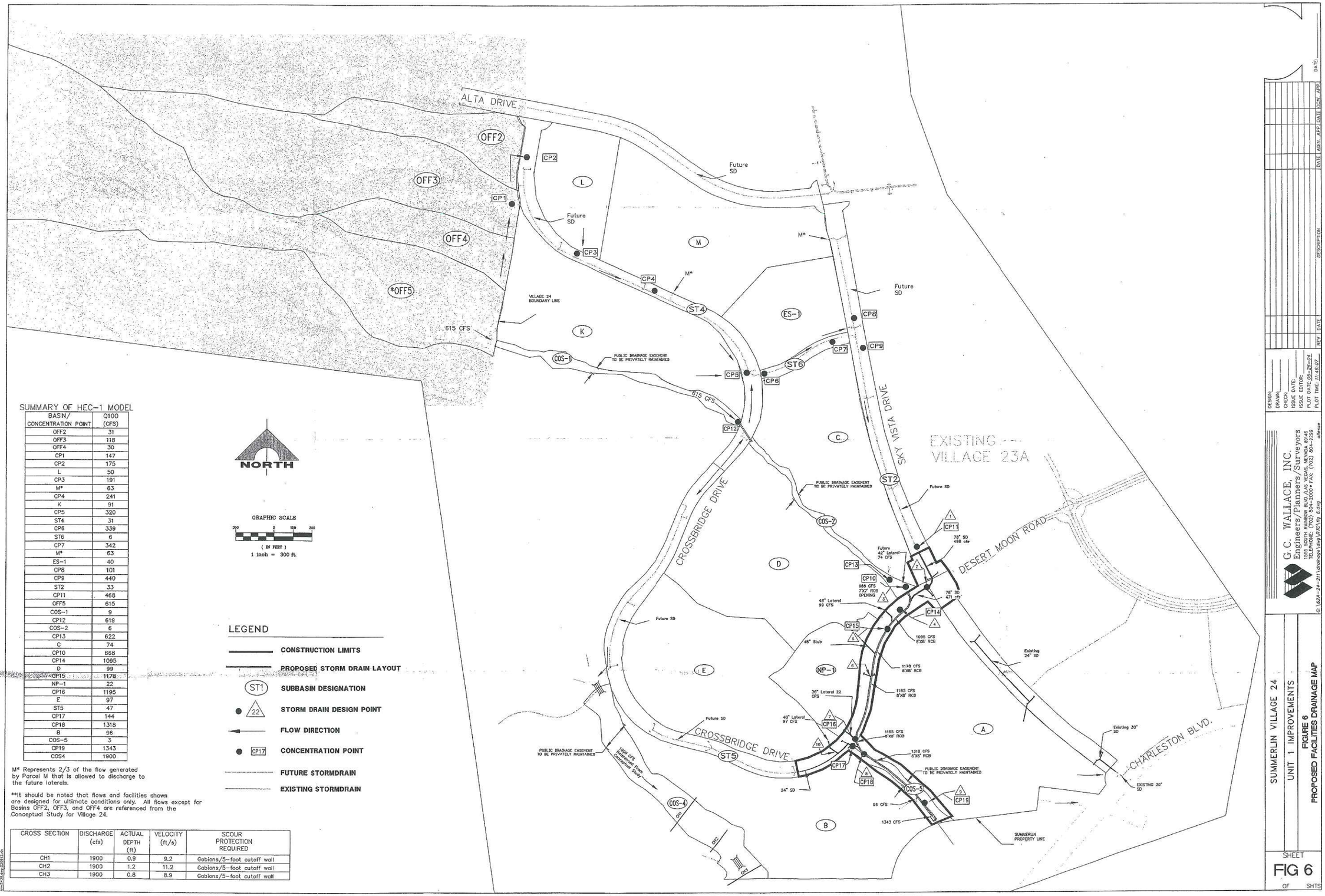
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-03-04
PLOT TIME: 13:22:41

NO.	DESCRIPTION	DATE	AGEN. APP.	DATE	CCRM APP.	DATE

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
2030 SOUTH RAINBOW BLVD. LAS VEGAS, NEVADA 89146
TELEPHONE (702) 804-2000 FAX (702) 804-2001
G:\82A-24-211\drainage\dwg\updated\fig 5.dwg

SUMMERLIN VILLAGE 24
UNIT 1 IMPROVEMENTS
FIGURE 5R
DRAINAGE PLAN FOR DROP INLET SIZING

SHEET
FIG 5R
OF SHTS



SUMMARY OF HEC-1 MODEL

BASIN/ CONCENTRATION POINT	Q100 (CFS)
OFF2	31
OFF3	118
OFF4	30
CP1	147
CP2	175
L	50
CP3	191
M*	63
CP4	241
K	91
CP5	320
ST4	31
CP6	339
ST6	6
CP7	342
M*	63
ES-1	40
CP8	101
CP9	440
ST2	33
CP11	468
OFF5	615
COS-1	9
CP12	619
COS-2	6
CP13	622
C	74
CP10	668
CP14	1095
D	99
CP15	1178
NP-1	22
CP16	1195
E	97
ST5	47
CP17	144
CP18	1318
B	96
COS-5	3
CP19	1343
COS4	1900

M* Represents 2/3 of the flow generated by Parcel M that is allowed to discharge to the future laterals.

**It should be noted that flows and facilities shown are designed for ultimate conditions only. All flows except for Basins OFF2, OFF3, and OFF4 are referenced from the Conceptual Study for Village 24.

LEGEND

- CONSTRUCTION LIMITS
- PROPOSED STORM DRAIN LAYOUT
- ST1 SUBBASIN DESIGNATION
- 22 STORM DRAIN DESIGN POINT
- FLOW DIRECTION
- CP17 CONCENTRATION POINT
- FUTURE STORMDRAIN
- EXISTING STORMDRAIN

CROSS SECTION	DISCHARGE (cfs)	ACTUAL DEPTH (ft)	VELOCITY (ft/s)	SCOUR PROTECTION REQUIRED
CH1	1900	0.9	9.2	Gabions/5-foot cutoff wall
CH2	1900	1.2	11.2	Gabions/5-foot cutoff wall
CH3	1900	0.8	8.9	Gabions/5-foot cutoff wall

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ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 09-28-07
PLOT TIME: 11:46:07

REV	DATE	DESCRIPTION	DATE	AGEN. APP	DATE	DSW. APP	DATE

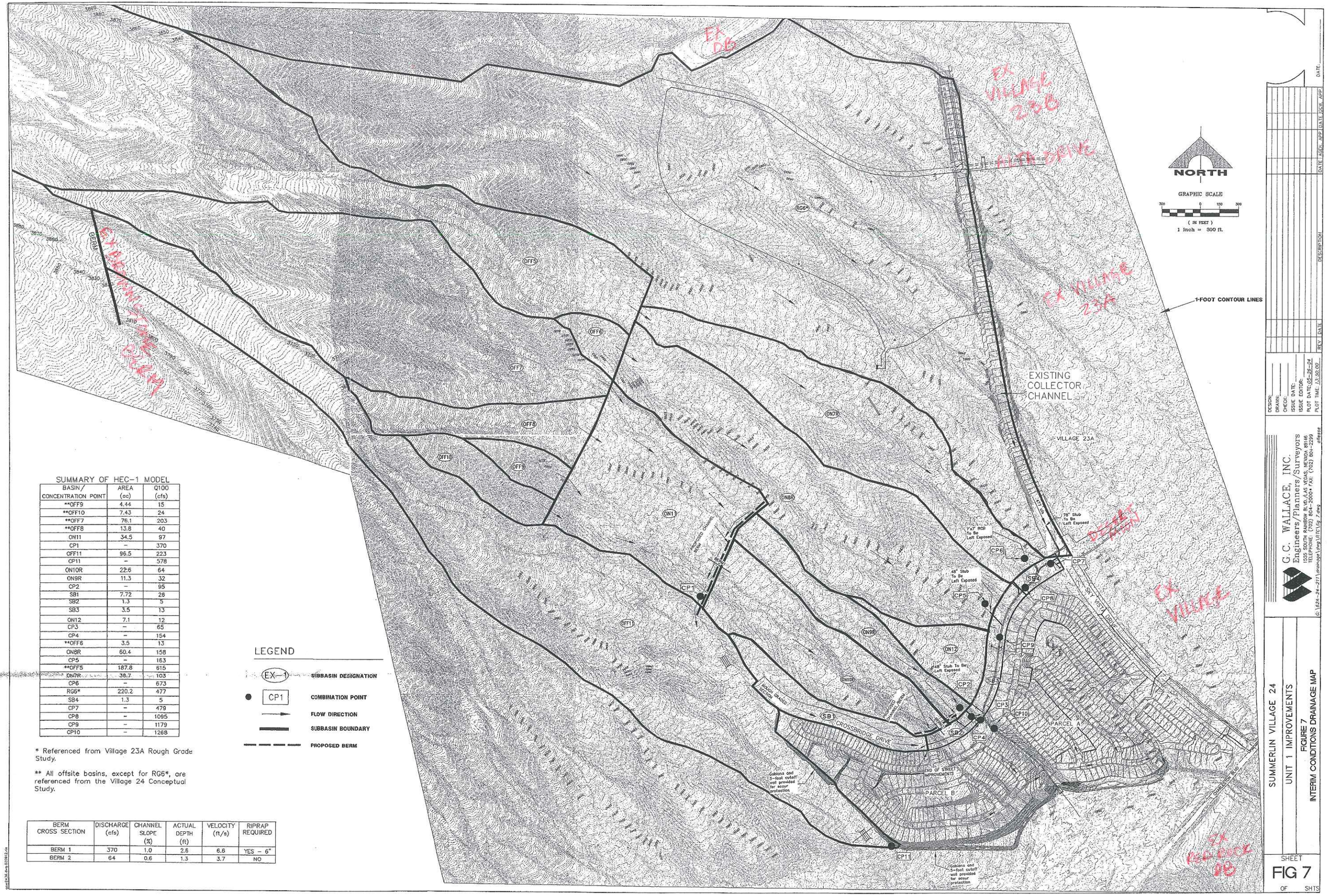
G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
offesse

G:\624-24-211\drawings\dwg\fig6.dwg

SUMMERLIN VILLAGE 24
UNIT 1 IMPROVEMENTS
FIGURE 6
PROPOSED FACILITIES DRAINAGE MAP

SHEET
FIG 6
OF SHTS

ewc7428.exe 020912.ce



SUMMARY OF HEC-1 MODEL

BASIN / CONCENTRATION POINT	AREA (ac)	Q100 (cfs)
**OFF9	4.44	15
**OFF10	7.43	24
**OFF7	76.1	203
**OFF8	13.8	40
ON11	34.5	97
CP1	–	370
OFF11	96.5	223
CP11	–	578
ON10R	22.6	64
ON9R	11.3	32
CP2	–	95
SB1	7.72	28
SB2	1.3	5
SB3	3.5	13
ON12	7.1	12
CP3	–	65
CP4	–	154
**OFF6	3.5	13
ON8R	60.4	158
CP5	–	163
**OFF5	187.8	515
ON7R	38.7	103
CP6	–	673
RG6*	220.2	477
SB4	1.3	5
CP7	–	479
CP8	–	1095
CP9	–	1179
CP10	–	1268

* Referenced from Village 23A Rough Grade Study.

** All offsite basins, except for RG6*, are referenced from the Village 24 Conceptual Study.

LEGEND

- EX-1 — SUBBASIN DESIGNATION
- CP1 — COMBINATION POINT
- FLOW DIRECTION
- SUBBASIN BOUNDARY
- PROPOSED BERM

BERM CROSS SECTION	DISCHARGE (cfs)	CHANNEL SLOPE (%)	ACTUAL DEPTH (ft)	VELOCITY (ft/s)	RIPRAP REQUIRED
BERM 1	370	1.0	2.6	6.6	YES – 6"
BERM 2	64	0.6	1.3	3.7	NO

DESIGN:
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CHECK:
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 05-26-04
PLOT TIME: 11:56:06

NO.	DESCRIPTION	REV. DATE

DATE | ASSOC. APP. | DATE | DCM APP. | DATE

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
G:\624-24-2211\acad\dgn\11X17.dgn

SUMMERLIN VILLAGE 24
UNIT 1 IMPROVEMENTS
FIGURE 7
INTERIM CONDITIONS DRAINAGE MAP

SHEET
FIG 7
OF SHTS

```
51          KK     SB3
52          KM   ONSITE SUBBASIN SB3
53          KM             AREA    ACRES
54          BA  .00553
55          LS       0       94
56          UD   0.089
            *

57          KK     CP2
58          KM  CONCENTRATION POINT CP2
59          KM  COMBINE CP1 AND SB3
60          HC       2
            *

61          KK     SB4
62          KM   ONSITE SUBBASIN SB4
63          KM             AREA    ACRES
64          BA  .00200
65          LS       0       94
66          UD   0.050
            *

67          KK     CP3
68          KM  CONCENTRATION POINT CP3
69          KM  COMBINE SB4 AND CP3
70          HC       2
            *
71          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   26         SB1
                .
                .
   41           .          SB2
                .            .
                .            .
   47         CP1............
                .
                .
   51           .          SB3
                .            .
                .            .
   57         CP2............
                .
                .
   61           .          SB4
                .            .
                .            .
   67         CP3............

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*****************************************
 *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
 *              JUN   1998               *
 *           VERSION 4.1                 *
 *                                       *
 *  RUN DATE   29MAR04  TIME  11:45:46   *
 *                                       *
 *****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*          (916) 756-1104               *
*                                       *
*****************************************
```

```
*****************************************************************
* ............................................................ *
* :       SUMMERLIN VILLAGE 24                               : *
* :       UNIT 1 IMPROVEMENTS                                : *
* :                                                          : *
* :      PROPOSED CONDITIONS                                 : *
* :      DEVELOPED ONSITE                                    : *
* :                                                          : *
* :..........................................................: *
* :              RETURN PERIOD_ _ _ _10/100-YEAR             : *
* :              DISTRIBUTUION_ _ _ _6-HOUR SDN3             : *
* :              PROJECT NO_ _ _ _ _ 62A.24.211              : *
* :              FILENAME_ _ _ _ _ _   PRO.H1                : *
* :              DATE_ _ _ _ _ _ _ _   2/25/04               : *
* :..........................................................: *

        DEPTH AREA REDUCTION FACTOR
                SQ MILES            DARF
                   0-.1             1.0
                 10-YEAR           .575

 23 IO          OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE

   [illegible]  HYDROGRAPH TIME DATA
                     NMIN           5  MINUTES IN COMPUTATION INTERVAL
```

```
                 TTIME          0000  STARTING TIME
                    NQ           300  NUMBER OF HYDROGRAPH ORDINATES
                 NDDATE         2    0  ENDING DATE
                 NDTIME          0055  ENDING TIME
                 ICENT             19  CENTURY MARK

              COMPUTATION INTERVAL      .08 HOURS
                   TOTAL TIME BASE    34.92 HOURS

        ENGLISH UNITS
             DRAINAGE AREA          SQUARE MILES
             PRECIPITATION DEPTH    INCHES
             LENGTH, ELEVATION      FEET
             FLOW                   CUBIC FEET PER SECOND
             STORAGE VOLUME         ACRE-FEET
             SURFACE AREA           ACRES
             TEMPERATURE            DEGREES FAHRENHEIT

    JP          MULTI-PLAN OPTION
                     NPLAN            1  NUMBER OF PLANS

    JR          MULTI-RATIO OPTION
                   RATIOS OF PRECIPITATION
                  1.00        .57
1

             PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
                                FLOWS IN CUBIC FEET PER SECOND,  AREA IN SQUARE MILES
                                                TIME TO PEAK IN HOURS

                                                          RATIOS APPLIED TO PRECIPITATION
 OPERATION        STATION      AREA     PLAN              RATIO 1  RATIO 2
                                                            1.00      .57

 HYDROGRAPH AT
+                   SB1        .01      1    FLOW           15.       8.
                                             TIME          3.50     3.50

 HYDROGRAPH AT
+                   SB2        .00      1    FLOW            5.       3.
                                             TIME          3.50     3.50

  2 COMBINED AT
+                   CP1        .01      1    FLOW           21.      11.
                                             TIME          3.50     3.50

 HYDROGRAPH AT
+                   SB3        .01      1    FLOW           13.       7.
                                             TIME          3.50     3.50

  2 COMBINED AT
+                   CP2        .01      1    FLOW           34.      18.
                                             TIME          3.50     3.50

 HYDROGRAPH AT
+                   SB4        .00      1    FLOW            5.       3.
                                             TIME          3.50     3.50

  2 COMBINED AT
+                   CP3        .02      1    FLOW           39.      20.
                                             TIME          3.50     3.50


 *** NORMAL END OF HEC-1 ***
```

SUMMERLIN

VILLAGE 24 UNIT 1 IMPROVEMENTS

INCLUDING PARCELS "A" & "B" MASS GRADING

2006

DEVELOPER

The Howard Hughes Corporation SM

an affiliate of General Growth Properties, Inc.

THE HOWARD HUGHES CORPORATION
a Nevada corporation

10000 W. CHARLESTON, SUITE 200
LAS VEGAS, NEVADA 89135
OFFICE PHONE NO. (702) 791-4300
OFFICE FAX NO. (702) 791-4450

ENGINEER

G.C. WALLACE, INC.
Engineers/Planners/Surveyors

1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
OFFICE: (702) 804-2000, FAX: (702) 804-2299
SUMMERLIN OFFICE 10000 CHARLESTON BLVD., STE. 130
OFFICE: (702) 804-2160, FAX: (702) 804-2295

DRAINAGE CERTIFICATION

I CERTIFY THAT THE GRADING PLANS ARE IN CONFORMANCE WITH THE APPROVED DRAINAGE STUDY ON FILE AT THE CITY OF LAS VEGAS FOR THIS PROJECT.

BERT A. HUGHES R.P.E. 10259 DATE

THE HOWARD HUGHES CORPORATION,
a Delaware corporation

By: KEVIN ORROCK DATE

Title: EXECUTIVE VICE PRESIDENT, SUMMERLIN DEVELOPMENT

"APPROVAL OF THESE PLANS IS LIMITED TO THOSE IMPROVEMENTS CONSTRUCTED IN THE DEDICATED RIGHTS-OF-WAY AND / OR DEDICATED EASEMENTS. THIS APPROVAL DOES NOT AUTHORIZE THE CONSTRUCTION OF ANY IMPROVEMENTS THAT DEVIATE FROM ADOPTED STANDARDS AND / OR SPECIFICATIONS, EXCEPT THOSE SPECIFICALLY LISTED UNDER DEVIATIONS FROM STANDARD. THE ENGINEER SHALL RESOLVE ANY DEVIATION OTHER THAN THOSE LISTED IN DEVIATIONS FROM STANDARDS IN FAVOR OF THE UNIFORM STANDARD DRAWINGS AND SPECIFICATIONS CLARK COUNTY AREA NEVADA".

JORGE CERVANTES, PE #13977, PTOE DATE
CITY ENGINEER
CITY OF LAS VEGAS, NEVADA

CLV PLANNING DEPARTMENT

THIS PLAN MEETS THE APPLICABLE STANDARDS IF THE PLANNING AND DEVELOPMENT DEPARTMENT

M. MARGO WHEELER, AICP, DATE
DIRECTOR OF PLANNING AND DEVELOPMENT

NEVADA POWER COMPANY DISCLAIMER

NOTE:
EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATIONS.

CALL BEFORE YOU DIG: 1(800)227-2600

NEVADA POWER Co. REVIEWED BY DATE

LAS VEGAS VALLEY WATER DISTRICT DATE
(SHEETS 1, 2, 4, 9-14, 17, 20-25, 43) (PROJECT #106984)

CLV FIRE DEPARTMENT DATE

SPRINT DATE

SOUTHWEST GAS CORP. DATE

COX COMMUNICATIONS DATE

SHEET 1 OF 45

CLV DRAWING NO.

DESIGN:
DRAWN:
CHECK:
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 02-27-06
PLOT TIME: 11:40:40

REV	DATE	DESCRIPTION	DATE	AGEN. APP	DATE	GCW. APP

90% SUBMITTAL - NOT FOR CONSTRUCTION

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
I:\v24\DMR-Phase1\dwg\mps\DMRtc001.dwg gpeterson

SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
COVER SHEET

JOB NO. 62A.24.211

SHEET 1
1 OF 45 SHTS

CITY OF LAS VEGAS GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE "UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA NEVADA" , LATEST ISSUE; THE "UNIFORM STANDARD DRAWINGS FOR PUBLIC WORKS CONSTRUCTION, CLARK COUNTY AREA NEVADA", LATEST REVISED EDITION; THE "SUMMERLIN IMPROVEMENT STANDARDS" FOR WORK IN THE SUMMERLIN AREA; AND OTHER APPLICABLE APPROVED STANDARDS ISSUED BY THE CONTROLLING AGENCY; THE UNIFORM BUILDING CODE; AND ALL LOCAL CITY CODES AND ORDINANCES APPLICABLE, EXCEPT AS NOTED ON THIS SHEET AS "DEVIATIONS FROM STANDARDS".

2. THE EXISTENCE AND LOCATION OF ANY OVERHEAD OR UNDERGROUND UTILITY LINES, PIPES, OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A RESEARCH OF THE AVAILABLE RECORDS. EXISTING UTILITIES AS SHOWN FROM CLV PLANS LIBRARY ARE APPROXIMATE AND FOR RECORD PURPOSES. EXISTING UTILITIES ARE LOCATED ON PLANS ONLY FOR THE CONVENIENCE OF THE CONTRACTOR. EXISTING UTILITY SERVICE LATERALS MAY NOT BE SHOWN ON THE PLANS. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, LOCATE ALL UNDERGROUND AND OVERHEAD INTERFERENCE'S, WHICH MAY AFFECT HIS OPERATION DURING CONSTRUCTION AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO SAME. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR OVERHEAD UTILITIES SO AS TO SAFELY PROTECT ALL PERSONNEL AND EQUIPMENT, AND SHALL BE RESPONSIBLE FOR ALL COST AND LIABILITY IN CONNECTION THEREWITH.

3. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING UTILITY LINES, STRUCTURES AND STREET IMPROVEMENTS WHICH ARE TO REMAIN IN PLACE, FROM DAMAGE, AND ALL SUCH IMPROVEMENTS OR STRUCTURES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED SATISFACTORY TO THE CITY ENGINEER AND OWNING UTILITY COMPANY AT THE EXPENSE OF THE CONTRACTOR.

4. ALL CONSTRUCTION SHALL BE SHOWN ON THESE PLANS, ANY REVISIONS SHALL HAVE THE PRIOR WRITTEN APPROVAL OF THE CITY ENGINEER.

5. TYPE V CEMENT SHALL BE USED IN ALL OFF-SITE CONCRETE WORK. CONCRETE TO BE 3000 P.S.I. MINIMUM @28 DAYS. MIX DESIGN TO BE APPROVED BY THE CITY ENGINEER, PRIOR TO THE USE ON THE PROJECT.

6. PERMITS ARE REQUIRED FOR ANY WORK IN THE PUBLIC RIGHT-OF-WAY. THE CONTRACTOR SHALL SECURE ALL PERMITS AND INSPECTIONS REQUIRED FOR THIS CONSTRUCTION.

7. EXPANSION JOINTS REQUIRED, MAXIMUM EVERY 300' IN EXTRUDED-TYPE CURB.

8. AC PAVEMENT TO BE ONE-HALF INCH (1/2") ABOVE LIP OF ALL GUTTERS AFTER COMPACTION, EXCEPT AT SIDEWALK RAMPS AND CROSS GUTTERS.

9. CURB AND GUTTER FOUND TO BE UNACCEPTABLE TO THE CITY OF LAS VEGAS SHALL BE REMOVED AND REPLACED PER SUMMERLIN STANDARD DRAWING S-47.

10. SIDEWALK RAMPS SHALL BE CONSTRUCTED IN EACH QUADRANT OF AN INTERSECTION PER STANDARD DRAWING 235. EXACT LOCATION OF RAMPS MAY BE ADJUSTED IN THE FIELD BY A CITY INSPECTOR.

11. CONTRACTOR SHALL PROVIDE ALL NECESSARY HORIZONTAL AND VERTICAL TRANSITIONS BETWEEN NEW CONSTRUCTION AND EXISTING SURFACES TO PROVIDE FOR PROPER DRAINAGE AND FOR INGRESS AND EGRESS TO NEW CONSTRUCTION. THE EXTENT OF TRANSITIONS TO BE AS SHOWN ON PLANS.

12. ALL GRADING WORK SHALL CONFORM TO THE SOILS REPORT AS PREPARED BY THE SOILS ENGINEER APPROVED BY THE CITY ENGINEER, AND AS SHOWN ON THESE PLANS.

13. EXACT LOCATION OF ALL SAWCUT LINES MAY BE ADJUSTED OR DETERMINED IN THE FIELD BY A CITY OF LAS VEGAS ENGINEER IF LOCATION ON PLANS IS NOT CLEARLY SHOWN, OR EXISTING PAVEMENT CONDITION REQUIRES RELOCATIONS.

14. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT EXISTING PERMANENT SURVEY MONUMENTS. ANY MONUMENTS DISTURBED SHALL BE REPLACED AND ADJUSTED PER AVAILABLE RECORDS IN ACCORDANCE WITH N.R.S. STATUTE NO. 625.550.

15. UTILITY COMPANY METER BOXES, MANHOLE LIDS, VALVE COVERS, ETC., SHALL BE LOCATED OUT OF DRIVEWAYS, DRIVEWAY APRONS, FLOW LINES, AND CROSS GUTTERS UNLESS WRITTEN APPROVAL IS GRANTED BY THE UTILITY COMPANY AND THE CITY ENGINEER.

16. WALL NOTES: ALL WALLS, NEW OR EXISTING, ARE ONLY SHOWN ON CIVIL PLANS FOR THE PURPOSE OF REVIEWING GRADING RELATIONSHIPS; FLOOD CONTROL AND SIGHT DISTANCE AT INTERSECTIONS. NEW WALLS REQUIRE A SEPARATE PERMIT AND INSPECTION BY THE BUILDING DEPARTMENT.

17. ASPHALT MIX DESIGN MUST BE SUBMITTED AND APPROVED BY THE CITY ENGINEER PRIOR TO THE PLACEMENT OF ASPHALT WITHIN CITY RIGHT-OF-WAY.

18. CONTRACTOR SHALL ADJUST ALL NEW AND EXISTING INLETS, VALVE BOXES, MANHOLE RIMS, AND SEWER CLEAN OUTS, ETC. TO FINISH GRADE AS APPLICABLE WHETHER OR NOT THEY ARE SHOWN ON THE PLANS.

19. MATERIALS, HANDLING AND PLACEMENT OF PORTLAND CEMENT CONCRETE SHALL BE IN ACCORDANCE WITH APPLICABLE SECTIONS OF NDOT OR THE CLARK COUNTY AREA SPECIFICATIONS (AS APPLICABLE) AND THE PLANS AND DETAILS SHOWN HEREON.

DEVIATIONS FROM STANDARDS

1. ADD RAISED MEDIAN TO NEIGHBORHOOD COLLECTOR LEVEL 2 (PER S.I.S. DWG NO S-6) TO ENHANCE MARKETING AND SALES ENTRIES INTO VILLAGE 24. RIGHT-OF-WAY (BC-BC) EXPANDS TO 67.34 FEET TO 84.00 FEET (AS MEDIAN ISLAND VARIES), IN LIEU OF 54.00 FEET. TRAVEL LANES REMAIN UNCHANGED.
2. REDUCE LANDSCAPE MEDIAN ISLAND IN FUTURE "GATED" PARCEL ENTRIES (PER S.I.S. DWG NO S-12A) FROM 15.00 FEET TO 13.34 FEET, IN EXCHANGE FOR WIDER COMMON AREAS WHICH ARE PROPOSED 20 FEET WIDE IN LIEU OF 15 FEET. THIS ADDITIONAL AREA WILL BE UTILIZED FOR GRADING AND SLOPE ADJUSTMENTS. CORRESPONDINGLY, THE RIGHT-OF-WAY IS REDUCED FROM 84.00 FEET TO 81.34 FEET. TRAVEL LANES REMAIN UNCHANGED.
3. STREET LIGHTS, AT ALL FUTURE PARCEL ENTRIES, WILL BE SET AT 10 FEET OUTSIDE OF BOR AND 2.5 FEET OF BC (IN LIEU OF LOCATIONS SET PER S.I.S. E-16 FOR MEANDERING SIDEWALK). THIS WILL ALLOW ADJUSTMENTS TO PARCEL ENTRIES WITHOUT AFFECTING STREET LIGHT LOCATIONS.

CONSTRUCTION NOTES

1. ALL BARRICADING AND TEMPORARY TRAFFIC CONTROL DEVICES OR METHODS USED DURING CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE "NEVADA TRAFFIC CONTROL MANUAL," MOST RECENT EDITION, PUBLISHED BY THE STATE OF NEVADA, DEPARTMENT OF HIGHWAYS, EXCEPT AS OTHERWISE PROVIDED IN THE CONTRACT SPECIFICATIONS OR AS REQUIRED BY THE ENGINEER.
2. AT THE TIME OF PRE-CONSTRUCTION CONFERENCE, THE CONTRACTOR SHALL FURNISH, FOR APPROVAL, A TRAFFIC BARRICADING PLAN AND METHOD OF MAINTAINING PUBLIC CONVEYANCE AND SAFETY THROUGHOUT THE CONSTRUCTION AREA. TRAFFIC BARRICADING PLANS SHALL COMPLY WITH APPLICABLE PORTIONS OF SECTIONS 624 AND 625 OF THE STANDARD SPECIFICATIONS, THE TRAFFIC CONTROL MANUAL AND APPLICABLE CITY ORDINANCES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERTICAL ADJUSTMENT OF EXISTING SANITARY, WATER AND STORM SEWER MANHOLES TO THE FINAL FINISH GRADES AS NOTED ON THE CONTRACT DRAWINGS, AND IN ACCORDANCE WITH SECTION 609 OF THE "STANDARD SPECIFICATIONS," AND ANY VERTICAL ADJUSTMENTS OF WATER VALVE BOXES AND OTHER APPURTENANCES SHALL BE IN ACCORDANCE WITH THE DETAILS SHOWN ON THE CONTRACT DRAWINGS.
4. NOTICE: GRADING AUTHORIZED ONLY AFTER PERMITTEE'S FULL COMPLIANCE WITH FEDERAL ENDANGERED SPECIES ACT.
5. THE DESIGN GRADE (DG) INDICATED ON THESE PLANS IS FOR VERTICAL ELEVATION DESIGN CALCULATION PURPOSES AND DOES NOT NECESSARILY REPRESENT THE FINISH IMPROVEMENT GRADES @ CENTERLINE. (I.E. THRU MEDIAN AREAS).
6. ALL EXISTING UTILITY CROSSINGS MUST BE VERIFIED PRIOR TO CONSTRUCTION OF ANY MAIN LINES OR LATERALS THAT MAY BE ADVERSELY EFFECTED. ANY DISCREPANCIES IN LOCATION AND/OR ELEVATION MUST BE PROVIDED TO THE ENGINEER FOR ACCEPTANCE PRIOR TO CONSTRUCTION.
7. 48 HOURS PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL CONTACT:

LAS VEGAS VALLEY WATER DISTRICT	PHONE	870-2011
NEVADA POWER COMPANY	PHONE	1-800-227-2600
SPRINT	PHONE	1-800-227-2600
SOUTHWEST GAS CORPORATION	PHONE	365-2296
KERN RIVER GAS	PHONE	801-584-6762

CITY OF LAS VEGAS GRADING NOTES

1. IN THE EVENT THAT ANY UNFORESEEN CONDITIONS NOT COVERED BY THESE NOTES ARE ENCOUNTERED DURING GRADING OPERATIONS, THE OWNER/ENGINEER SHALL BE IMMEDIATELY NOTIFIED FOR DIRECTION.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM ALL NECESSARY CUTS AND FILLS WITHIN THE LIMITS OF THIS PROJECT AND THE RELATED OFF-SITE WORK, SO AS TO GENERATE THE DESIRED SUBGRADE, FINISH GRADES AND SLOPES SHOWN.
3. CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ALL EXCAVATION. ADEQUATE SHORING SHALL BE DESIGNED AND PROVIDED BY THE CONTRACTOR TO PREVENT UNDERMINING OF ANY ADJACENT FEATURES OR FACILITIES AND/OR CAVING OF EXCAVATION.
4. THE CONTRACTOR IS WARNED THAT AN EARTHWORK BALANCE WAS NOT NECESSARILY THE INTENT OF THIS PROJECT. ANY ADDITIONAL MATERIAL REQUIRED OR LEFTOVER MATERIAL FOLLOWING EARTHWORK OPERATIONS BECOMES THE RESPONSIBILITY OF THE CONTRACTOR.
5. THE GRADING CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH THE OWNER TO PROVIDE FOR THE REQUIREMENTS OF THE PROJECT STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND ASSOCIATED PERMIT.
6. CONTRACTOR SHALL GRADE TO THE LINES AND ELEVATIONS SHOWN ON THE PLANS WITHIN THE FOLLOWING HORIZONTAL AND VERTICAL TOLERANCES AND DEGREES OF COMPACTION, IN THE AREAS INDICATED:

	HORIZONTAL	VERTICAL COMPACTION	
A. PAVEMENT AREA SUBGRADE	0.1'+	+0.0' TO -0.1'	SEE SOILS REPORT
B. ENGINEERED FILL	0.5'+	+0.1' TO -0.1'	SEE SOILS REPORT

COMPACTION TESTING WILL BE PERFORMED BY THE OWNER OR HIS REPRESENTATIVE.

7. ALL CUT AND FILL SLOPES SHALL BE PROTECTED UNTIL EFFECTIVE EROSION CONTROL HAS BEEN ESTABLISHED.
8. THE USE OF POTABLE WATER WITHOUT A SPECIAL PERMIT FOR BUILDING OR CONSTRUCTION PURPOSES INCLUDING CONSOLIDATION OF BACKFILL OR DUST CONTROL IS PROHIBITED. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR CONSTRUCTION WATER.
9. THE CONTRACTOR SHALL MAINTAIN THE STREETS, SIDEWALKS AND ALL OTHER PUBLIC RIGHT-OF-WAY IN A CLEAN, SAFE AND USABLE CONDITION. ALL SPILLS OF SOIL, ROCK OR CONSTRUCTION DEBRIS SHALL BE PROMPTLY REMOVED FROM THE PUBLICLY OWNED PROPERTY DURING CONSTRUCTION AND UPON COMPLETION OF THE PROJECT. ALL ADJACENT PROPERTY, PRIVATE OR PUBLIC, SHALL BE MAINTAINED IN A CLEAN, SAFE AND USABLE CONDITION.
10. IN THE EVENT THAT ANY TEMPORARY CONSTRUCTION ITEM IS REQUIRED THAT IS NOT SHOWN ON THESE DRAWINGS, THE OWNER AGREES TO PROVIDE AND INSTALL SUCH ITEM AT HIS OWN EXPENSE AND AT THE DIRECTION OF THE CITY ENGINEER. TEMPORARY CONSTRUCTION INCLUDES DITCHES, BERMS, ROAD SIGNS AND BARRICADES, ETC.

LEGEND AND ABBREVIATION

- (1) DETAIL DRAWING NUMBER
- (1/1) DETAIL DRAWING NUMBER DRAWN ON SAME SHEET
- (1/7) DETAIL DRAWING NUMBER WITH REFERENCE TO THE SHEET IT IS DRAWN ON
- (1/S) STANDARD DRAWING NUMBER (S) PER SUMMERLIN IMPROVEMENT STANDARDS, OR PER OTHER STANDARDS AS NOTED IN ABBREVIATION TABLE
- (1/1) INDICATES CONSTRUCTION NOTE
- (A/1) INDICATES REMOVAL NOTE
- (1) INDICATES CURVE NUMBER
- INDICATES SEWER MANHOLE IN PROFILE
- INDICATES STORM DRAIN MANHOLE IN PROFILE
- (60.50) TC EXISTING SPOT ELEVATION
- 60.50 TC PROPOSED SPOT ELEVATION
- [60.50] TC FUTURE SPOT ELEVATION
- STUB & CAP PIPE
- POLE

EMBANKMENT TOP — YYY PROPOSED; YYY BY SEPARATE CONTRACT; BOTTOM — YYY EXISTING

ABBREVIATION

I	= IMPROVEMENTS
W	= WATER
S	= SEWER OR SUMMERLIN IMPROVEMENT STANDARDS
INV	= INVERT
IRR.	= IRRIGATION SLEEVES
DIP	= DUCTILE IRON PIPE
FUT	= FUTURE
SD	= STORM DRAIN
SL	= STREET LIGHTING
SIG	= TRAFFIC SIGNAL
SMH	= SEWER MANHOLE
SDMH	= STORM DRAIN MANHOLE
CC	= CLARK COUNTY
CLV	= CITY OF LAS VEGAS
LVVWD	= LAS VEGAS VALLEY WATER DISTRICT
NDOT	= NEVADA DEPT. OF TRANSPORTATION STANDARD PLANS, JANUARY 1999
TR	= STREET LIGHT TRENCH (SEE ELECTRICAL PLANS)
DG	= DESIGN GRADE
TC	= TOP OF CURB
FG	= FINISHED GRADE
MOC	= MIDDLE OF CURVE
UDS	= UNIFORM STANDARD DRAWINGS-- CLARK COUNTY AREA (LATEST EDITION)
DCSWCS	= DESIGN AND CONSTRUCTION STANDARDS FOR WASTEWATER COLLECTION SYSTEMS
UDACS	= UNIFORM DESIGN AND CONSTRUCTION STANDARDS FOR WATER DISTRIBUTION SYSTEMS

NOTE: LEGEND & ABBREVIATIONS IN THE "SUMMERLIN IMPROVEMENT STANDARDS", LATEST EDITION, WILL BE UTILIZED FOR ANY LEGEND & ABBREVIATION REQUIRED WHICH ARE NOT SHOWN.

STREET QUANTITIES (PUBLIC)

STREETS		
4" A.C. PAVEMENT	22,037	S.Y.
TYPE II AGGREGATE	3,942	C.Y.
6" TYPE "L" C & G	6,559	L.F.
TYPE "A" CURBS	5,568	L.F.
EXCAVATION	65,500	C.Y.
EMBANKMENT	37,700	C.Y.
ADJUST EXISTING FACILITIES TO GRADE	3	EA

STREET LIGHTS		
SINGLE ARM ST. LT.	10	EA.
DOUBLE ARM ST. LT.	14	EA.
CONDUIT	3750	L.F.
IRRIGATION		
IRRIGATION SLEEVES – BANK "A"	622	L.F.

MASS GRADING QUANTITIES (PRIVATE)

EXCAVATION	117,700 C.Y.	5' HIGH CUT-OFF WALL	3,640 L.F.
EMBANKMENT	486,700 C.Y.	GABION STRUCTURE	1,348 C.Y.

CONSTRUCTION NOTES

IMPROVEMENTS

(1/I) INSTALL "A" TYPE ISLAND CURB (S-50/S)
(2/I) INSTALL 6" "L" TYPE CURB & GUTTER (S-47/S)
(3/I) INSTALL A.C. PAVEMENT PER TYPICAL STREET SECTION DETAILS
(4/I) INSTALL HANDICAP RAMP CURB DEPRESSION (S-75/S)
(5/I) VERIFY LOCATION AND ELEVATION OF EXISTING ROADWAY IMPROVEMENT AND MATCH TO EXISTING CONDITION
(6/I) SAWCUT AND REPLACE EXISTING A.C. PAVEMENT
(7/I) INSTALL CONCRETE ENCASEMENT (6/21)

WATER

(1/W) INSTALL 16" DIA. GATE VALVE & VALVE BOX (8/UDACS)
(2/W) INSTALL 12" DIA. GATE VALVE & VALVE BOX (8/UDACS)
(3/W) INSTALL CAP AND 2" MANUAL BLOW-OFF ASSEMBLY (4A/UDACS)
(4/W) INSTALL STANDARD FIRE HYDRANT ASSEMBLY (7/UDACS)
(5/W) ADJUST EXISTING WATER LINE APPURTENANCES TO FINISHED GRADE
(6/W) REMOVE CAP AND BLOW-OFF PER UDACS PLATE NO. 4A AND CONNECT TO EXISTING WATER LINE (CONTRACTOR TO VERIFY SIZE AND LOCATION OF EXISTING WATER LINE). IF DISCREPANCY EXISTS, NOTIFY ENGINEER PRIOR TO CONSTRUCTION.
(7/W) INSTALL 16"X8" TEE
(8/W) INSTALL 16"X12" TEE
(9/W) INSTALL 1 1/2" TYPE K COPPER W/SERVICE SADDLE PER UDACS PLATE NO. 4A. (FOR EXISTING WATER LINE CONNECTION, CONTRACTOR TO VERIFY SIZE, INVERT, AND LOCATION OF EXISTING WATER LINE)
(10/W) INSTALL 8" DIA. GATE VALVE & VALVE BOX (8/UDACS)
(11/W) INSTALL 11-1/4" BEND
(12/W) INSTALL 22-1/2" BEND
(13/W) INSTALL 45° BEND
(14/W) INSTALL 90° BEND
(15/W) 6"X4" REDUCER
(18/W) INSTALL 6" DIA. GATE VALVE & VALVE BOX (8/UDACS)
(19/W) INSTALL 16"X6" TEE
(20/W) INSTALL 4" DIA. GATE VALVE & VALVE BOX (8/UDACS)

SEWER

(1/S) INSTALL 48" DIA. SEWER MANHOLE (SD-1-8/DCSWCS)
(2/S) INSTALL 48" DIA. SPECIAL SHALLOW SEWER MANHOLE, SHORTY CONE (SD-10/DCSWCS)
(3/S) INSTALL TEMPORARY PLUG AND CAP
(4/S) INSTALL WYE LATERAL CONNECTION (SD-17/DCSWCS)

STORM DRAIN

(1/SD) INSTALL TYPE I STORM DRAIN MANHOLE (403/USD)
(2/SD) INSTALL TYPE II STORM DRAIN MANHOLE (405/USD)
(3/SD) INSTALL TYPE III STORM DRAIN MANHOLE (406/USD)
(4/SD) INSTALL PRECAST MANHOLE TEE (407/USD)
(5/SD) INSTALL PRECAST ELBOW (SEE PLAN FOR ANGLE)
(6/SD) INSTALL PIPE JUNCTION (7/21)
(7/SD) INSTALL CLV TYPE "CM" DROP INLET (4/21) *
(8/SD) INSTALL TEMPORARY PLUG
(9/SD) INSTALL CONCRETE COLLAR (5/21)
(10/SD) INSTALL TYPE 1A MANHOLE STACK 48" DIA. W/24" OPENING (404/USD)
(11/SD) INSTALL TYPE 1 MANHOLE STACK 48" DIA. W/24" OPENING (403/USD)
(12/SD) INSTALL VELOCITY CONTROL RING (3/21)

* NOTE: INSTALL MANHOLE STEPS PER USD 402 NOTE 9 AND USD 410. DROP INLET FRAME AND COVER SHALL ALIGN WITH MANHOLE STEPS.

IRRIGATION

(1/IR) BANK "A"; 6"-8" & 2-4" SCHD 40 PVC (U-18/S) (1/21)
(2/IR) BANK "B"; 2-4" SCHD 40 PVC (U-18/S) (2/21)

NOTE TO CONTRACTOR:

1. ALL EXISTING UTILITY CROSSINGS MUST BE VERIFIED PRIOR TO CONSTRUCTION OF ANY MAIN LINES OR LATERALS THAT MAY BE ADVERSELY AFFECTED. ANY DISCREPANCIES IN LOCATION AND/OR ELEVATION MUST BE PROVIDED TO THE ENGINEER FOR ACCEPTANCE PRIOR TO CONSTRUCTION.
2. ALL COMMON LOTS AS SHOWN HEREIN TO BE PRIVATELY MAINTAINED BY THE SUMMERLIN H.O.A. A FUTURE MEANDERING SIDEWALK WILL BE INSTALLED BY SUMMERLIN AS REQUIRED TO SERVICE THE DEVELOPMENT OF EACH PARCEL.
3. ALL WATER LINE GATE VALVES, SERVICE GATE VALVES, AND FIRE HYDRANT GATE VALVES ARE TO BE CONSTRUCTED UNDER A.C. PAVEMENT. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY THAT ALL WATER VALVE CANS DO NOT CREATE CONFLICTS WITH THE PROPOSED CURB LINE PRIOR TO PLACEMENT OF CONCRETE. ALL WATER FACILITIES SHOWN IN THESE DRAWINGS HAVE BEEN "SCALED-UP" FOR CLARITY ONLY.

APPROVAL:

LAS VEGAS VALLEY WATER DISTRICT (PROJECT #106984) — DATE

CLV DRAWING NO. _____

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK RETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

Avoid cutting underground utility lines. It's costly.
Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE (USA)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

LOCATION

LYING WITHIN SECTIONS 34 TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA.

SUMMERLIN STREET CLASSIFICATION

CROSSBRIDGE DRIVE: NEIGHBORHOOD COLLECTOR LEVEL 1 AND LEVEL 2 WITH SHARED BIKE LANES
SKY VISTA DRIVE: NEIGHBORHOOD ARTERIAL WITH BIKE LANES

NOTES

SEE SHEET 4 FOR LAS VEGAS VALLEY WATER DISTRICT NOTES.
SEE SHEET 4 FOR LAS VEGAS FIRE & RESCUE GENERAL NOTES.
SEE SHEET 5 FOR CITY OF LAS VEGAS SEWER NOTES.
SEE SHEET 39 FOR CITY OF LAS VEGAS TRAFFIC NOTES.
SEE SHEET 40 FOR CITY OF LAS VEGAS STREETLIGHT NOTES.

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4. WATER MASTER PLAN
5. SEWER MASTER PLAN
6. STORM DRAIN MASTER PLAN
7. CROSSBRIDGE DRIVE PLAN AND PROFILE
8. CROSSBRIDGE DRIVE PLAN AND PROFILE
9. CROSSBRIDGE DRIVE PLAN AND PROFILE
10. CROSSBRIDGE DRIVE PLAN AND PROFILE
11. CROSSBRIDGE DRIVE PLAN AND PROFILE
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40. MASTER CONDUIT AND ELECTRICAL PLAN I
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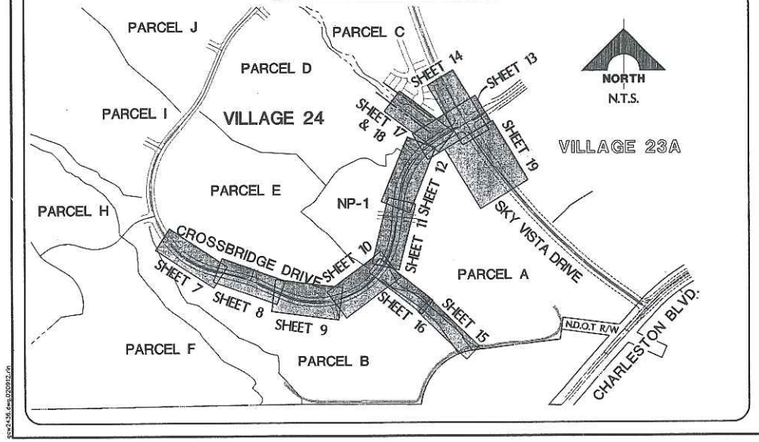
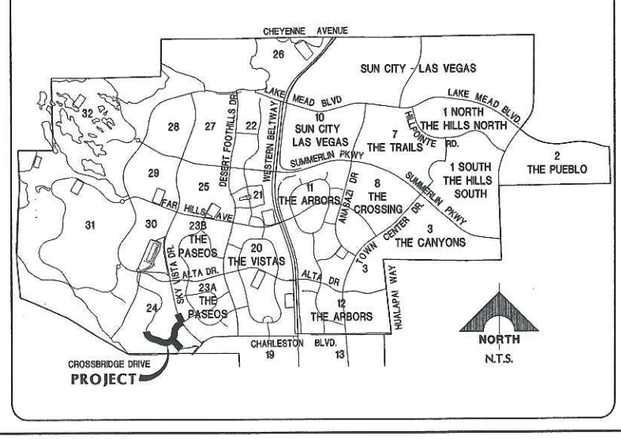
45. STORM DRAIN STRUCTURAL DETAILS III

LOCATION/SHEET INDEX MAP



VICINITY MAP



G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD. LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299

SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
PROJECT DATA SHEET

JOB NO. 62A24211

SHEET 2
2 OF 45 SHTS

DESIGN:
DRAWN:
CHECK:
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-07-05
PLOT TIME: 15:50:11

REV	DATE	DESCRIPTION	DATE	AGEN. APP	DATE	DCSE APP
2	12-07-05	90% SUBMITTAL - NOT FOR CONSTRUCTION				
1	10-27-05					

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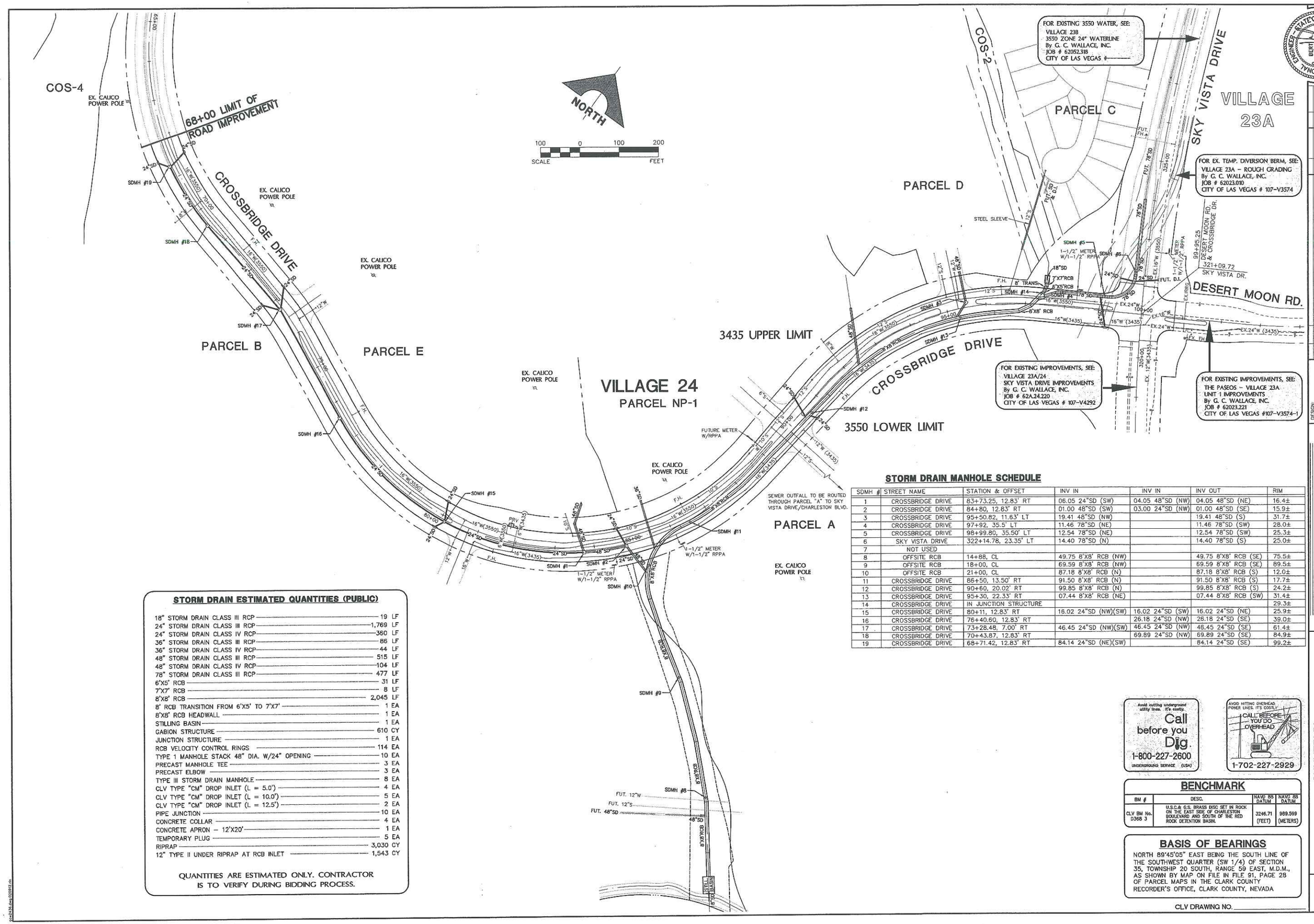
mfang



STORM DRAIN ESTIMATED QUANTITIES (PUBLIC)

18" STORM DRAIN CLASS III RCP	19 LF
24" STORM DRAIN CLASS III RCP	1,769 LF
24" STORM DRAIN CLASS IV RCP	360 LF
36" STORM DRAIN CLASS III RCP	86 LF
36" STORM DRAIN CLASS IV RCP	44 LF
48" STORM DRAIN CLASS III RCP	515 LF
48" STORM DRAIN CLASS IV RCP	104 LF
78" STORM DRAIN CLASS III RCP	477 LF
6'X5' RCB	31 LF
7'X7' RCB	8 LF
8'X8' RCB	2,045 LF
8' RCB TRANSITION FROM 6'X5' TO 7'X7'	1 EA
8'X8' RCB HEADWALL	1 EA
STILLING BASIN	1 EA
GABION STRUCTURE	610 CY
JUNCTION STRUCTURE	1 EA
RCB VELOCITY CONTROL RINGS	114 EA
TYPE 1 MANHOLE STACK 48" DIA. W/24" OPENING	10 EA
PRECAST MANHOLE TEE	3 EA
PRECAST ELBOW	3 EA
TYPE III STORM DRAIN MANHOLE	8 EA
CLV TYPE "CM" DROP INLET (L = 5.0')	4 EA
CLV TYPE "CM" DROP INLET (L = 10.0')	5 EA
CLV TYPE "CM" DROP INLET (L = 12.5')	2 EA
PIPE JUNCTION	10 EA
CONCRETE COLLAR	4 EA
CONCRETE APRON – 12'X20'	1 EA
TEMPORARY PLUG	5 EA
RIPRAP	3,030 CY
12" TYPE II UNDER RIPRAP AT RCB INLET	1,543 CY

QUANTITIES ARE ESTIMATED ONLY. CONTRACTOR IS TO VERIFY DURING BIDDING PROCESS.

STORM DRAIN MANHOLE SCHEDULE

SDMH #	STREET NAME	STATION & OFFSET	INV IN	INV IN	INV OUT	RIM
1	CROSSBRIDGE DRIVE	83+73.25, 12.83' RT	06.05 24"SD (SW)	04.05 48"SD (NW)	04.05 48"SD (NE)	16.4±
2	CROSSBRIDGE DRIVE	84+80, 12.83' RT	01.00 48"SD (SW)	03.00 24"SD (NW)	01.00 48"SD (SE)	15.9±
3	CROSSBRIDGE DRIVE	95+50.82, 11.63' LT	19.41 48"SD (NW)		19.41 48"SD (S)	31.7±
4	CROSSBRIDGE DRIVE	97+92, 35.5' LT	11.46 78"SD (NE)		11.46 78"SD (SW)	28.0±
5	CROSSBRIDGE DRIVE	98+99.80, 35.50' LT	12.54 78"SD (NE)		12.54 78"SD (SW)	25.3±
6	SKY VISTA DRIVE	322+14.78, 23.35' LT	14.40 78"SD (N)		14.40 78"SD (S)	25.0±
7	NOT USED					
8	OFFSITE RCB	14+88, CL	49.75 8'X8' RCB (NW)		49.75 8'X8' RCB (SE)	75.5±
9	OFFSITE RCB	18+00, CL	69.59 8'X8' RCB (NW)		69.59 8'X8' RCB (SE)	89.5±
10	OFFSITE RCB	21+00, CL	87.18 8'X8' RCB (N)		87.18 8'X8' RCB (S)	12.0±
11	CROSSBRIDGE DRIVE	86+50, 13.50' RT	91.50 8'X8' RCB (N)		91.50 8'X8' RCB (S)	17.7±
12	CROSSBRIDGE DRIVE	90+60, 20.02' RT	99.85 8'X8' RCB (N)		99.85 8'X8' RCB (S)	24.2±
13	CROSSBRIDGE DRIVE	95+30, 22.33' RT	07.44 8'X8' RCB (NE)		07.44 8'X8' RCB (SW)	31.4±
14	CROSSBRIDGE DRIVE	IN JUNCTION STRUCTURE				29.3±
15	CROSSBRIDGE DRIVE	80+11, 12.83' RT	16.02 24"SD (NW)(SW)	16.02 24"SD (SW)	16.02 24"SD (NE)	25.9±
16	CROSSBRIDGE DRIVE	76+40.60, 12.83' RT		26.18 24"SD (NW)	26.18 24"SD (SE)	39.0±
17	CROSSBRIDGE DRIVE	73+28.48, 7.00' RT	46.45 24"SD (NW)(SW)	46.45 24"SD (NW)	46.45 24"SD (SE)	61.4±
18	CROSSBRIDGE DRIVE	70+43.87, 12.83' RT		69.89 24"SD (NW)	69.89 24"SD (SE)	84.9±
19	CROSSBRIDGE DRIVE	68+71.42, 12.83' RT	84.14 24"SD (NE)(SW)		84.14 24"SD (SE)	99.2±

Avoid cutting underground utility lines. It's costly. Call before you Dig. 1-800-227-2600 UNDERGROUND SERVICE (USA)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY. CALL BEFORE YOU DO OVERHEAD 1-702-227-2929

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

CLV DRAWING NO. _____

ENGINEER – STATE OF NEVADA – BERT HUSSEY – No. 10256 – PROFESSIONAL – DATE: 1/15/16

DESIGN:
DRAWN:
CHECK:
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 01-04-16
PLOT TIME: 10:52:16
G:\24\DWG-Phase1\Geo Vistas\GVMTC0526.dwg

REV.	DATE	DESCRIPTION	DATE: DSGN. APP.	DATE: DRWN. APP.

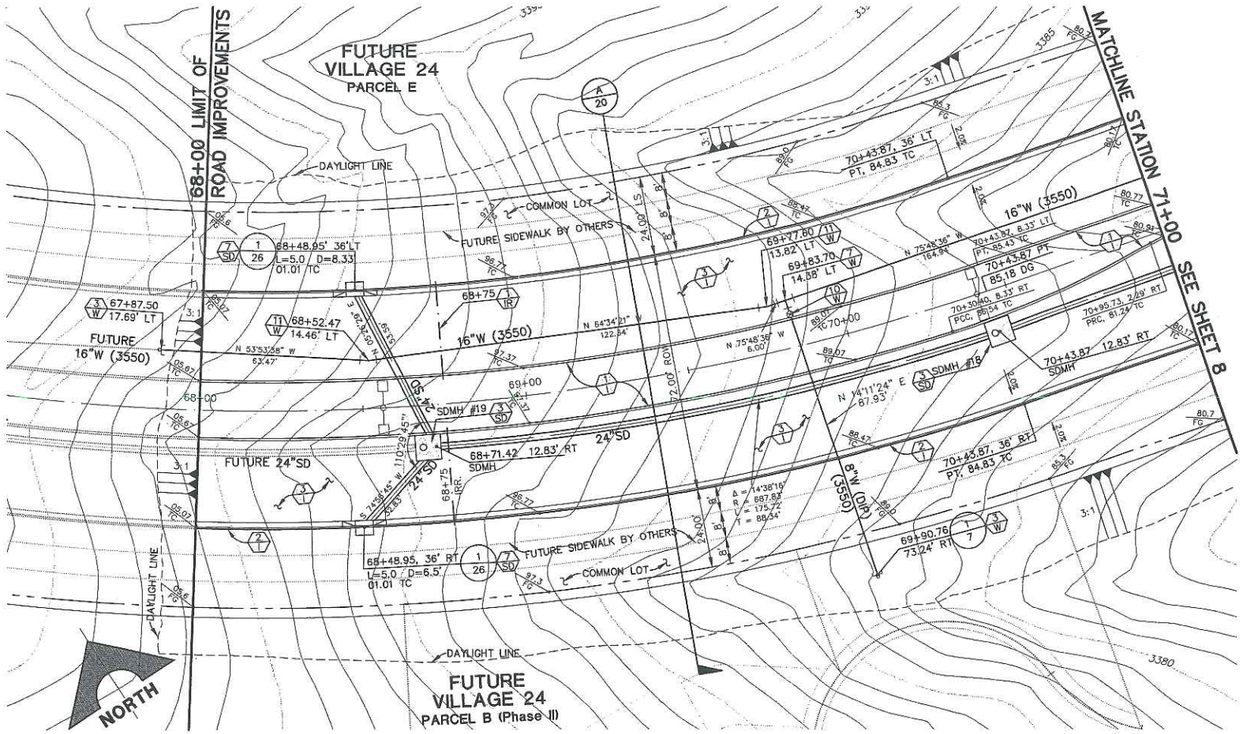
90% SUBMITTAL – NOT FOR CONSTRUCTION

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299

SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
STORM DRAIN MASTER PLAN

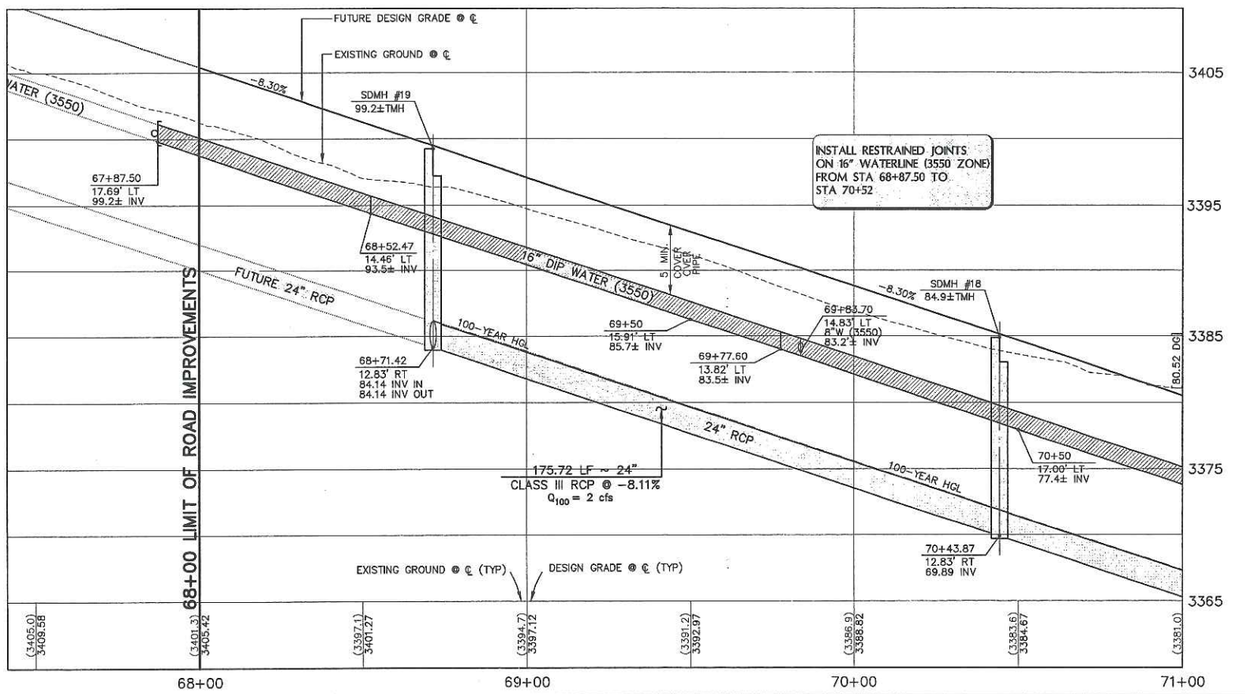
JOB NO. 62A.24.211

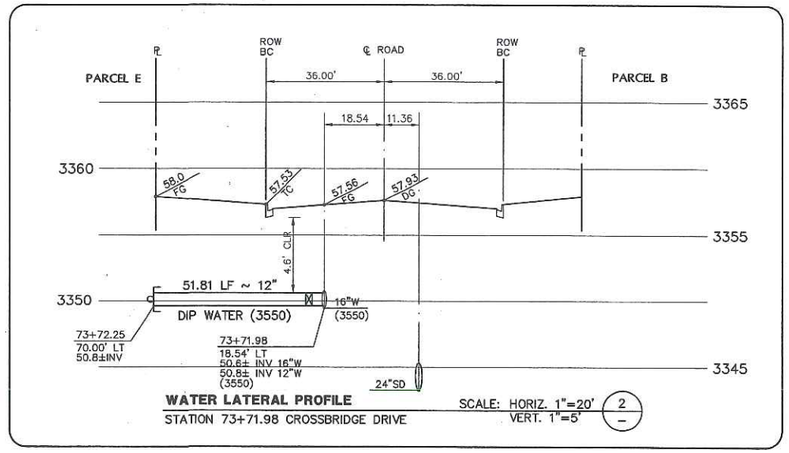
SHEET 6
6 OF 45 SHTS



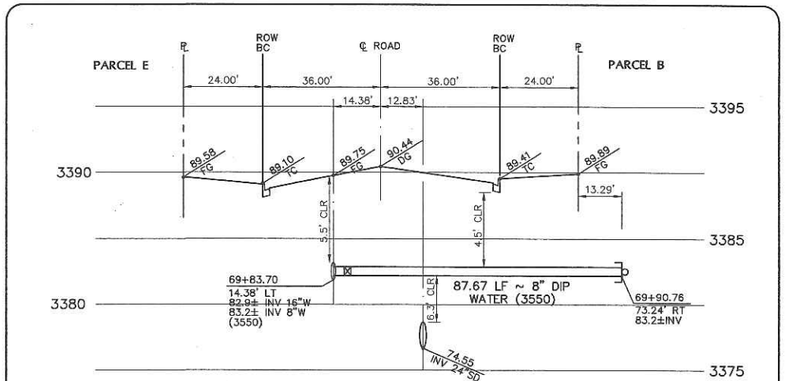
CROSSBRIDGE DRIVE (PUBLIC)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

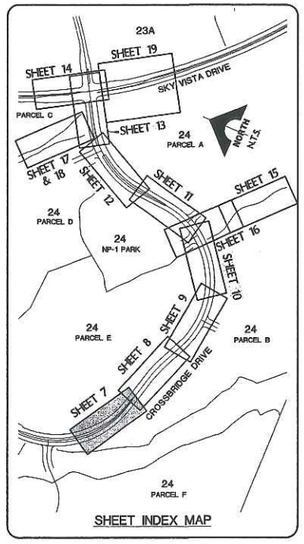




WATER LATERAL PROFILE
STATION 73+71.98 CROSSBRIDGE DRIVE
SCALE: HORIZ. 1"=20' (2)
VERT. 1"=5'



WATER LATERAL PROFILE
STATION 69+83.70 CROSSBRIDGE DRIVE
SCALE: HORIZ. 1"=20' (1)
VERT. 1"=5'



SHEET INDEX MAP

NOTE

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BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

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UNDERGROUND SERVICE (USA)

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1-702-227-2929

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT (PROJECT #106984) DATE

CLV DRAWING NO. _____

BERT HUGHES — STATE OF NEVADA — PROFESSIONAL ENGINEER — No. 10252 — DATE: 1/16/16

REV.	DATE	DESCRIPTION
		90% SUBMITTAL - NOT FOR CONSTRUCTION

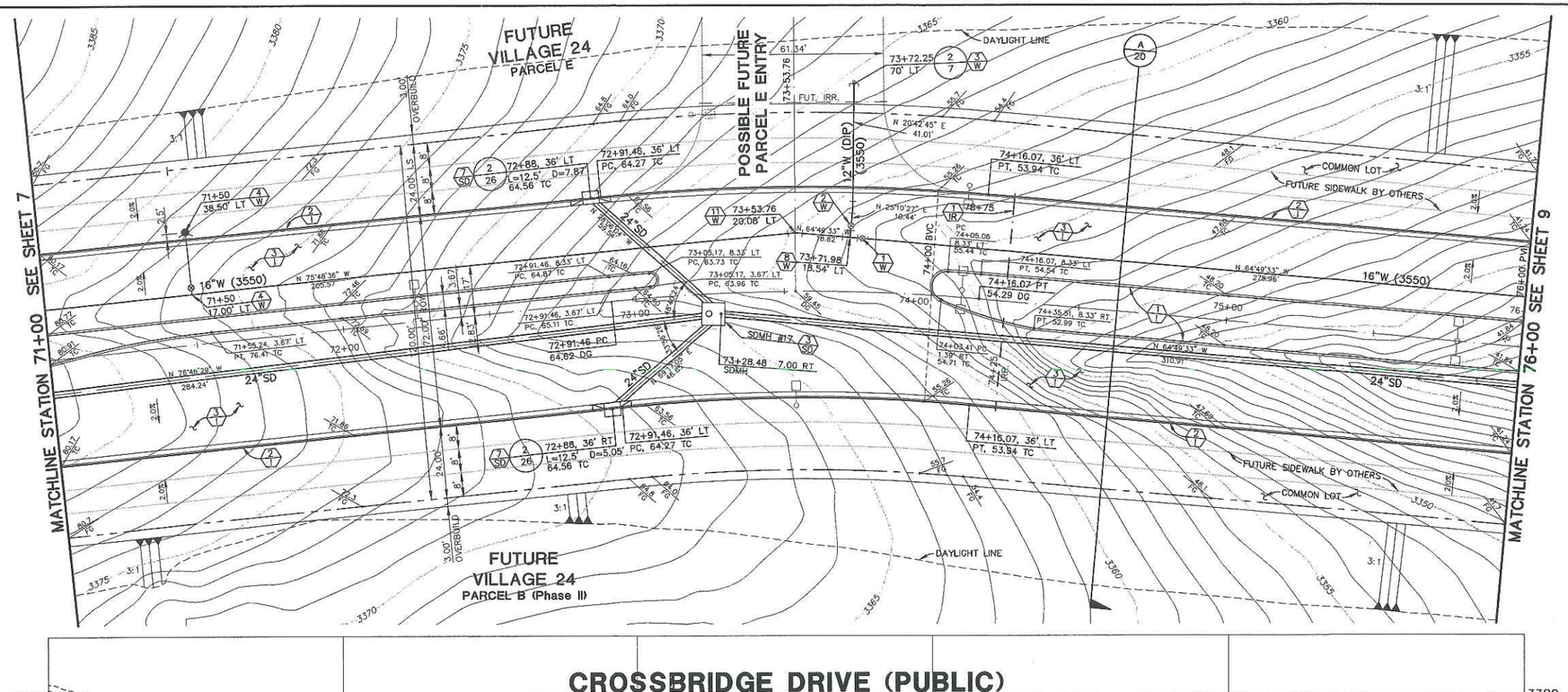
DESIGN: GT
DRAWN: GT
CHECK: STS/BAH
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-13-05
PLOT TIME: 14:53:42

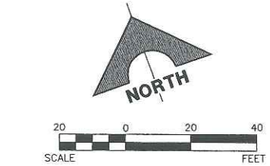
G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
(702) 804-8000 • FAX: (702) 804-8008
L:\2k1\VMR-Phase1\dwg\xrpg's\DMR1cs07.dwg mfong

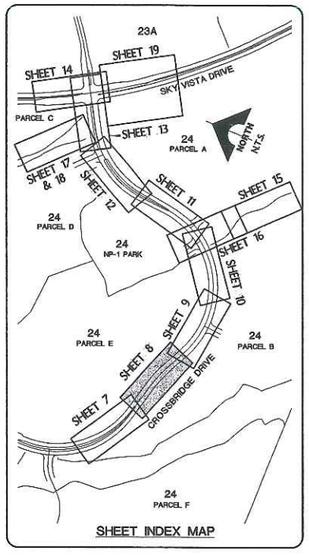
SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
CROSSBRIDGE DRIVE
PLAN AND PROFILE

JOB NO. 62A.24.211

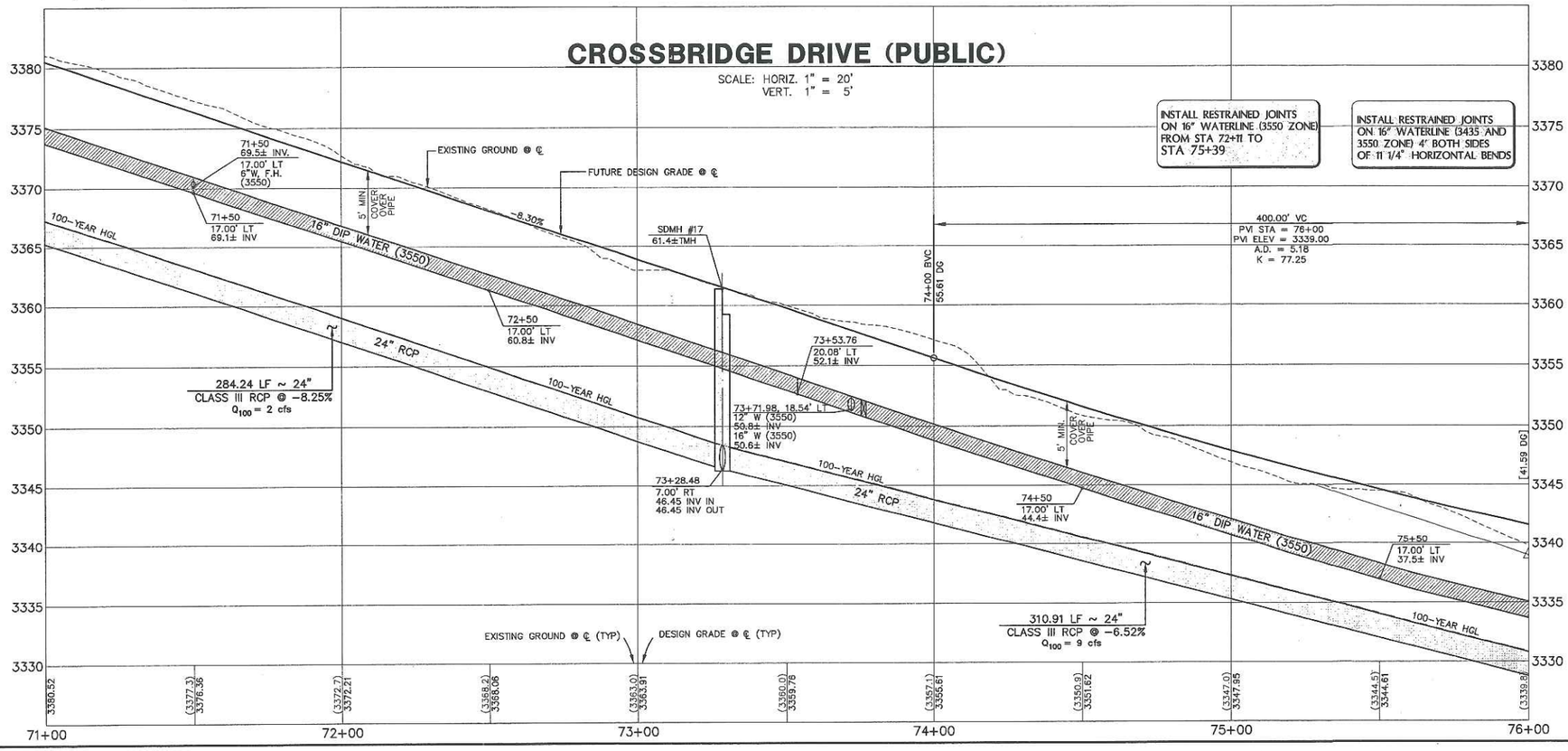
SHEET 7
7 OF 45 SHTS







SHEET INDEX MAP



NOTE

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BENCHMARK

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APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT (PROJECT #106984) DATE

CLV DRAWING NO.

STATE OF NEVADA
BERT A. HAUSER
PROFESSIONAL ENGINEER
No. 10259
CIVIL
DATE: 1/16/06

REV.	DATE	DESCRIPTION	DATE	AGEN.	APP	DATE	GCW.	APP

DESIGN: QT
DRAWN: QT
CHECK: STS/BAH
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-13-05
PLOT TIME: 14:56:14

90% SUBMITTAL - NOT FOR CONSTRUCTION

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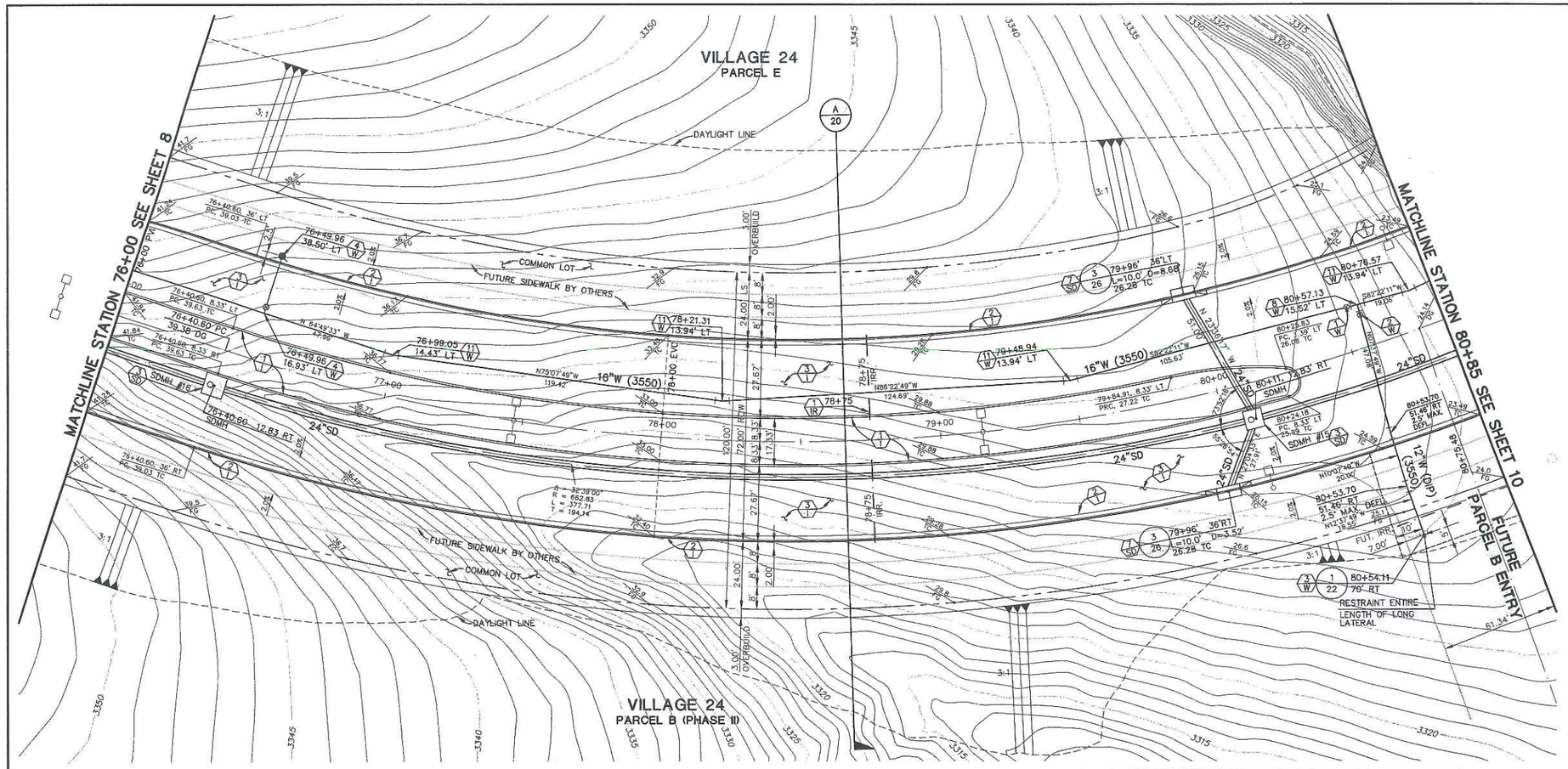
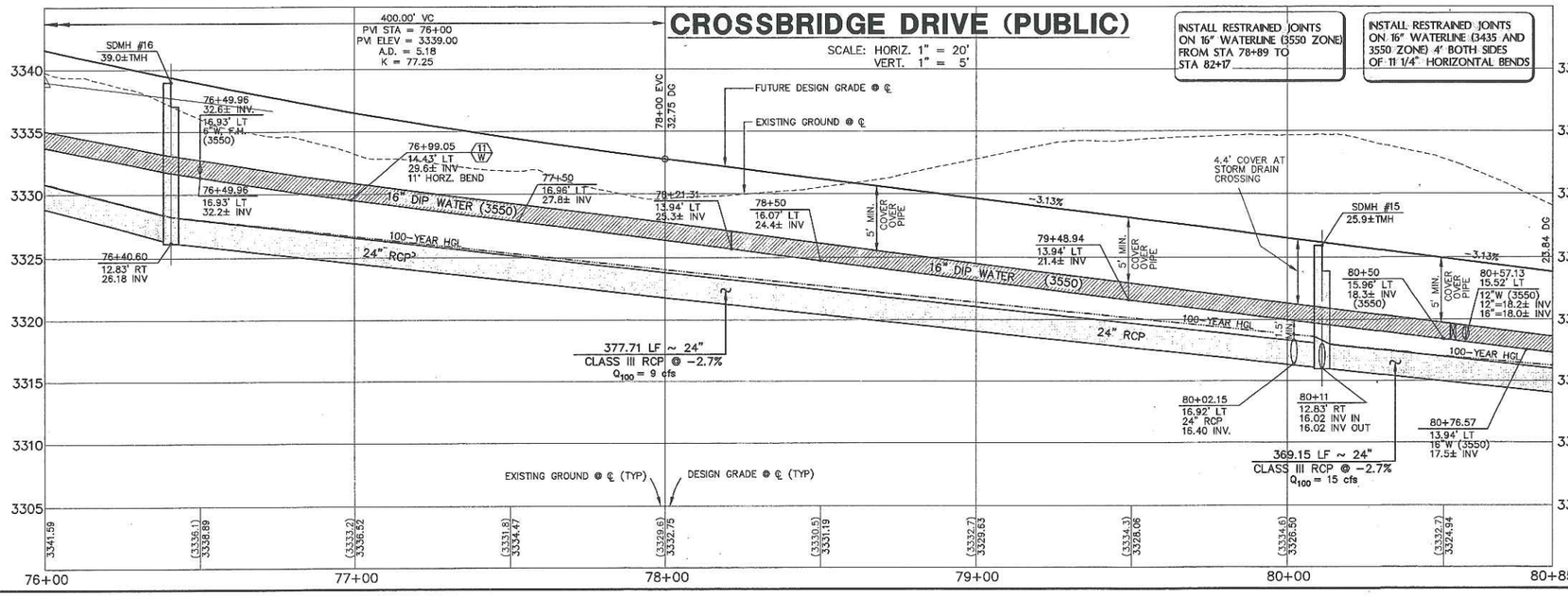
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2239
I:\v24\DMR-Phase1\dwg\lmrs\DMR1c008.dwg mtong

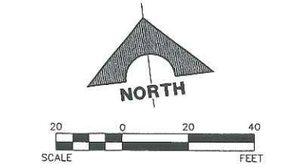
SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
CROSSBRIDGE DRIVE
PLAN AND PROFILE

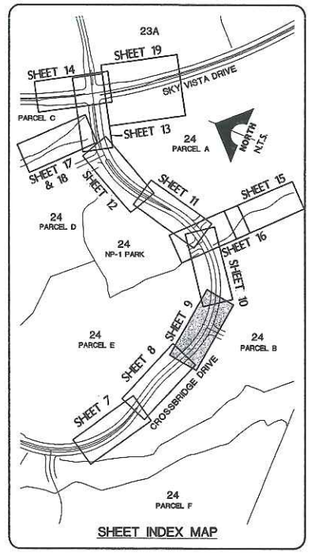
JOB NO. 62A.24.211

SHEET 8
8 OF 45 SHTS









SHEET INDEX MAP

NOTE

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BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

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APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT (PROJECT #106984) DATE

CLV DRAWING NO. _____

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
E:\V24\DWG-Phase1\dwg\mtp\DMRtc008.dwg

DESIGN: GT
DRAWN: GT
CHECK: STS/BAH
ISSUE DATE:
PLOT DATE: 11-13-06
PLOT TIME: 15:07:46

REV	DATE	DESCRIPTION	DATE AGEN. APP	DATE DOW. APP
		90% SUBMITTAL - NOT FOR CONSTRUCTION		

SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
CROSSBRIDGE DRIVE
PLAN AND PROFILE

JOB NO. 62A.24211

SHEET 9

9 OF 45 SHTS

BERT HUTCHINS — STATE OF NEVADA — PROFESSIONAL ENGINEER — No. 10029 — CIVIL
DATE: 11/06

VILLAGE 24
PARCEL E

SEE SHEET 22 FOR
INTERIM DIVERSION CHANNEL

INTERIM DIVERSION CHANNEL

RIPRAP
D50 = 8"
THICKNESS = 16"

DAYLIGHT LINE

MATCHLINE STATION 80+85 SEE SHEET 9

VILLAGE 24
PARCEL NP-1

MATCHLINE STATION 86+00 SEE SHEET 11

FUT. 15' PUBLIC
DRAINAGE ESMT.

FUT. PUBLIC STORM DRAIN
& SEWER EASEMENT

DEFLECT PIPE AS PER
ENGINEER'S AND
MANUFACTURER'S
RECOMMENDATION

FUTURE SIDEWALK BY OTHERS

COMMON LOT

FUTURE WATER
EASEMENT

VILLAGE 24
PARCEL B (PHASE 1)

VILLAGE 24
PARCEL A
SEE SHEET 16 FOR
CONTINUATION
OF 8'X8' RCB

CITY OF LAS VEGAS
PUBLIC DRAINAGE
EASEMENT (SURFACE
TO BE PRIVATELY
MAINTAINED)

OVERFLOW
CHANNEL
AND DRAINAGE
EASEMENT

✱ REDUCED PRESSURE PRINCIPLE ASSEMBLY (RPPA) (1) 1 1/2"

APPROVED RPPA(S) SHALL BE INSTALLED PER THE DISTRICT STANDARD PLATE NO. 1D AND 11A. PRE FINISHED HYDRO COWL BACK FLOW ENCLOSURES WITH A FINISHED COLOR OF SIERRA TAN, MODEL 2005-AK, (OR LVVWD APPROVED EQUAL BY ENGINEER) SHALL BE USED FOR 1 1/2" RPPA'S. NO WATER SHALL BE TAKEN FROM A SERVICE REQUIRING BACKFLOW PREVENTION UNTIL THE RPPA HAS BEEN SUCCESSFULLY TESTED BY THE LVVWD. ANY BLOCK WALL OR OTHER FENCE MATERIAL SHALL BE DESIGNED AND CONSTRUCTED AROUND THE OUTSIDE OF THE EASEMENT(S), SO AS TO ALLOW THE DISTRICT ACCESS FROM THE ADJACENT RIGHT-OF-WAY.

NORTH

SCALE 20 0 20 40 FEET

10.00' MIN.
1.00' MIN.
TYP. OVERFLOW CHANNEL SECTION (1)

SHEET INDEX MAP

NOTE

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BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. 0358 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

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APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT — DATE
(PROJECT #106984)

CLV DRAWING NO. _____

DESIGN: GT
DRAWN: GT
CHECK: STS/BAH
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE:12-13-05
PLOT TIME: 15:09:27

REV.	DATE	DESCRIPTION	DATE LGEN. APP	DATE DGW. APP
6		90% SUBMITTAL - NOT FOR CONSTRUCTION		

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
(702) 804-2000 • FAX: (702) 804-2099
L:\v24\DWG-Phase1\land\Vesp\1DWR1c010.dwg

SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
CROSSBRIDGE DRIVE
PLAN AND PROFILE

JOB NO. 62A.24.211

SHEET
10
10 OF 45 SHTS

CROSSBRIDGE DRIVE (PUBLIC)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

400.00' VC
LOW POINT ELEV = 3316.12
LOW POINT STA = 84+64.32
PVI STA = 84+00
PVI ELEV = 3314.00
A.D. = 4.73
K = 84.58

369.15 LF ~ 24" CLASS III RCP @ -2.7%
Q_{100} = 15 cfs

108.86 LF ~ 48" CLASS III RCP @ -2.8%
Q_{100} = 112 cfs

338.27 LF ~ 10" PVC PUBLIC SEWER @ -0.50% (C-900)

16" DIP WATER (3550)
16" DIP WATER (3435)

100-YEAR HGL

EXISTING GROUND @ ℄ (TYP)
DESIGN GRADE @ ℄ (TYP)

INSTALL RESTRAINED JOINTS ON 16" WATERLINE (3550 ZONE) FROM STA 78+89 TO STA 82+17

INSTALL RESTRAINED JOINTS ON 16" WATERLINE (3435 ZONE) FROM STA 80+96.85 TO STA 81+47

INSTALL RESTRAINED JOINTS ON 16" WATERLINE (3435 AND 3550 ZONE) 4' BOTH SIDES OF 11 1/4" HORIZONTAL BENDS

SEE SHEET 16 FOR CONTINUATION OF 8'X8' RCB

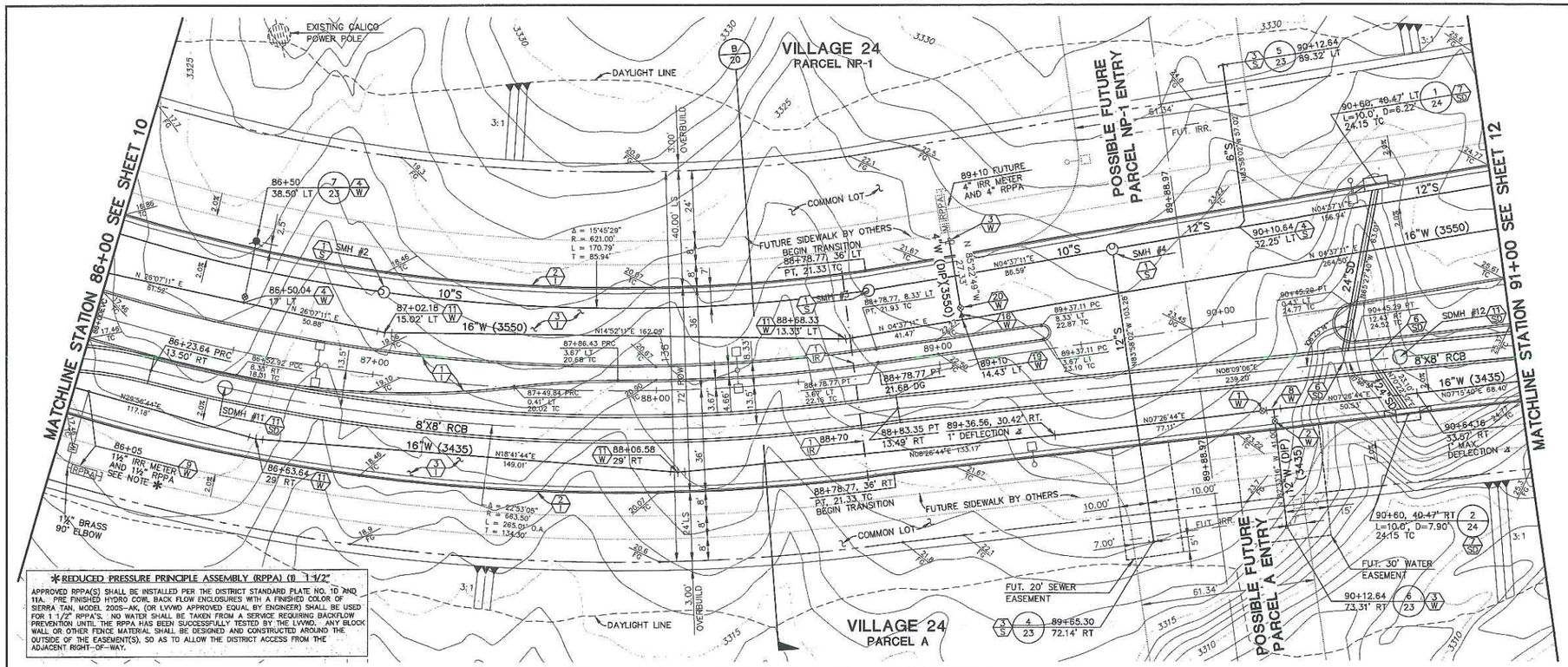
66.67 LF ~ 8'X8' RCB @ 1.50%

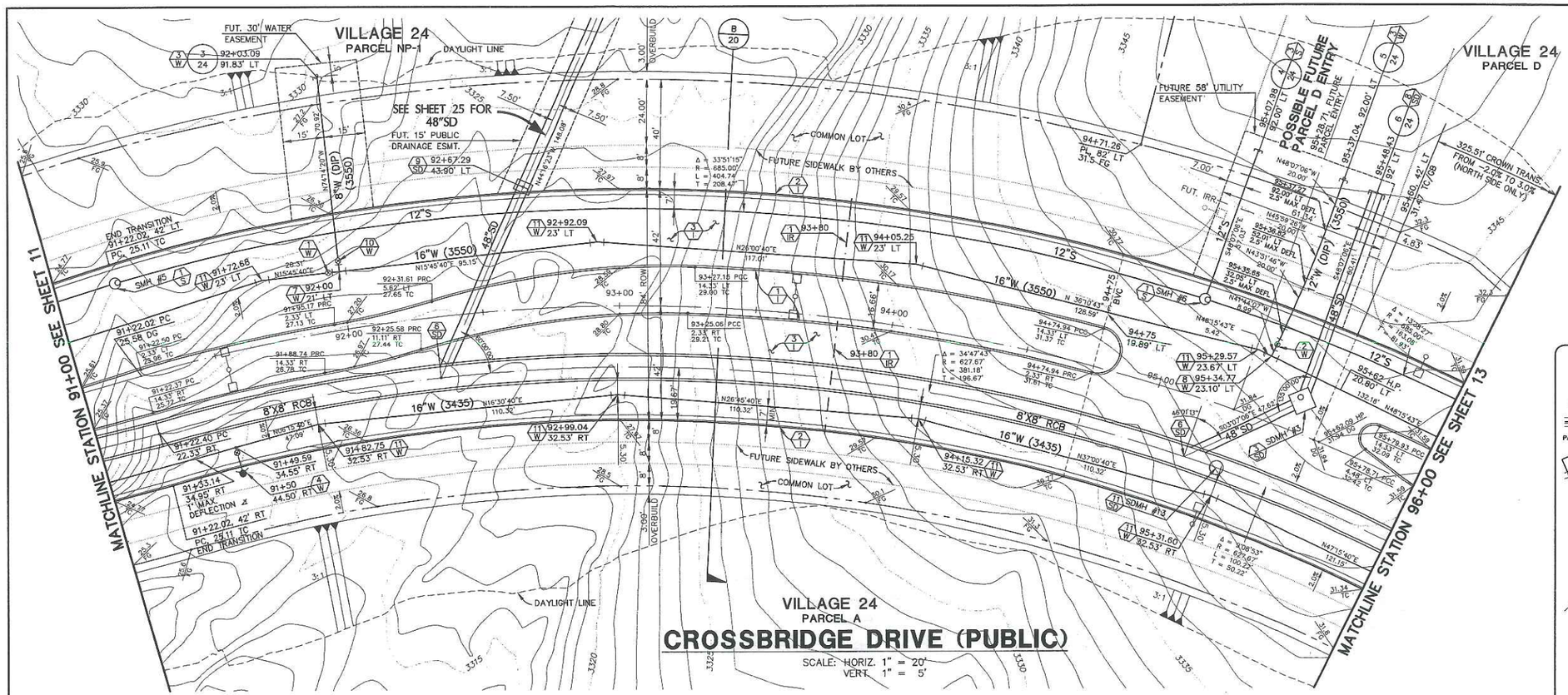
21+62.77 RCB= 85+62, 31.14' RT VERT. ∠ PT. 90.10 IMV

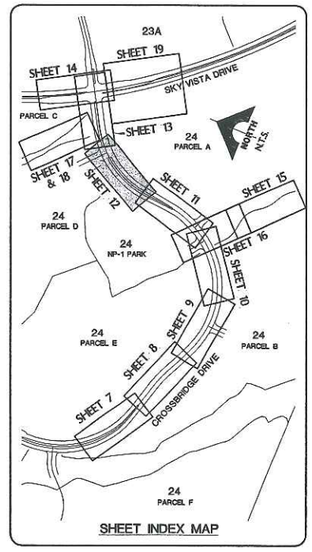
22+00 RCB = 85+95.13 CD END VELOCITY CONTROL RINGS 90.66 INV

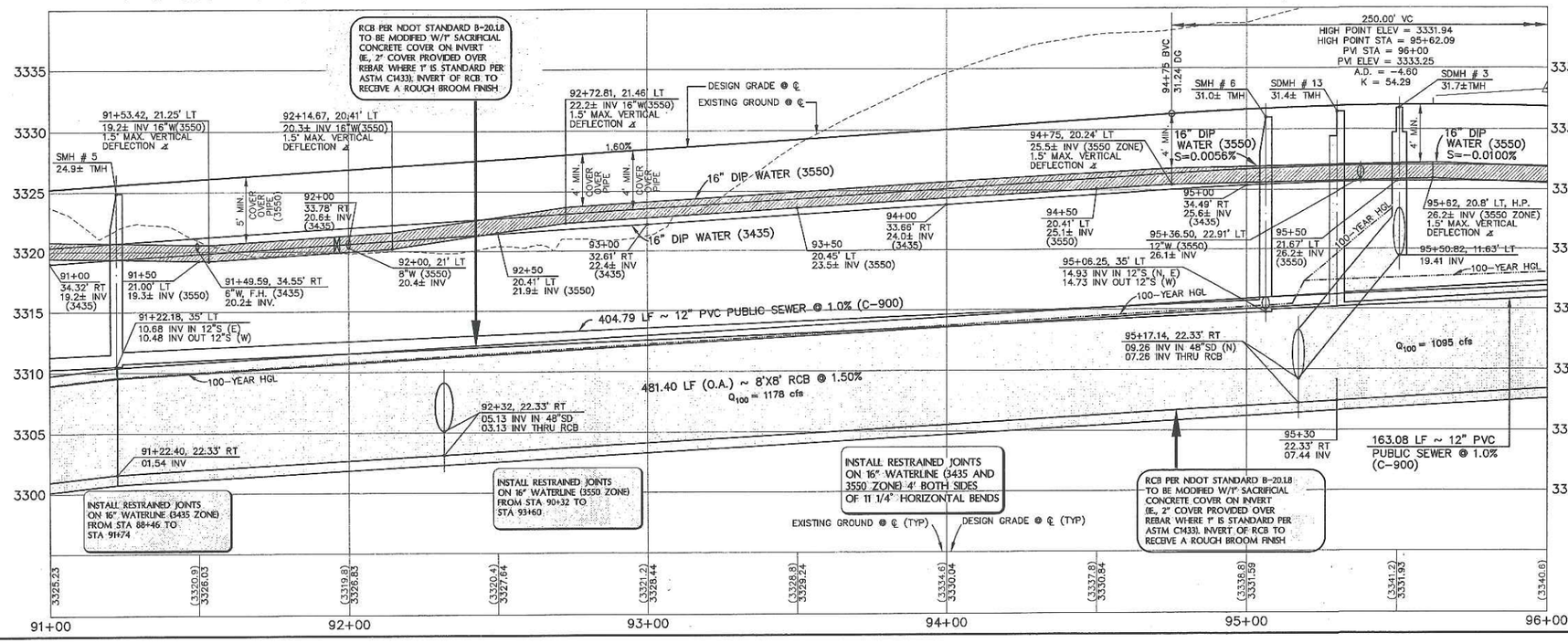
SDMH #1
SDMH #2
SDMH #10
SMH #1
SDMH #1
SDMH #2

80+85 81+00 82+00 83+00 84+00 85+00 86+00


MATCHLINE STATION 86+00 SEE SHEET 10
MATCHLINE STATION 91+00 SEE SHEET 12
VILLAGE 24
PARCEL NP-1
VILLAGE 24
PARCEL A
EXISTING CALICO POWER POLE
DAYLIGHT LINE
COMMON LOT
FUTURE SIDEWALK BY OTHERS
POSSIBLE FUTURE PARCEL NP-1 ENTRY
POSSIBLE FUTURE PARCEL A ENTRY
FUT. IRR.
FUT. 20' SEWER EASEMENT
FUT. 30' WATER EASEMENT
SMH #2
SMH #3
SMH #4
SDMH #11
SDMH #12
8'X8' RCB
16"W (3435)
16"W (3550)
10"S
12"S
24"SD
1½" BRASS 90° ELBOW
1½" IRR METER AND 1½" RPPA SEE NOTE *
86+50 38.50' LT
86+50.04 17' LT
87+02.18 15.62' LT
86+23.64 PRC 13.50' RT
87+86.43 PRC 20.58' TC
87+49.84 PRC 20.02' TC
88+06.58 29' RT
86+63.64 29' RT
88+70 13.49' RT
88+83.35 PT 13.49' RT
89+36.56, 30.42' RT
1° DEFLECTION
88+78.77, 36' RT PT, 21.33 TC BEGIN TRANSITION
88+78.77 PT 21.68' OG
88+78.77, 8.33' LT PT, 21.93' TC
88+88.33 13.35' LT
89+10 14.43' LT
89+37.11 PC 9.33' LT 22.87' TC
89+37.11 PC 3.67' LT 23.10' TC
89+10 FUTURE 4" IRR METER AND 4" RPPA
90+12.64 89.32' LT
90+60, 40.47' LT L=10.0' D=6.22° 24.15' TC
90+10.64 32.25' LT
90+45.29 PT 0.43' LT 24.77' TC
90+45.29 RT 12.43' RT 24.52' TC
90+84.16 33.57' RT 1° MAX. DEFLECTION
90+60, 40.47' RT L=10.0' D=7.90° 24.15' TC
90+12.64 73.31' RT
89+85.30 72.14' RT
Δ = 15°45'29" R = 621.00' L = 170.79' T = 85.94'
Δ = 22°53'05" R = 663.50' L = 265.01' T = 134.30'
N89°45'05"W 2572.72'
N89°58'02"W 103.28'
N89°58'02"W 2572.72'
N00°09'06"E 239.20'
N07°26'44"E 77.12'
N07°15'40"E 68.40'
N08°26'44"E 133.17'
N28°56'44"E 117.18'
N18°41'44"E 149.01'
N14°52'13"E 162.09'
N 26°07'11" E 87.55'
N 26°07'11" E 50.88'
N 04°37'11" E 86.59'
N 04°37'11" E 41.47'
N 04°37'11" E 156.74'
N 04°37'11" E 264.50'
N 04°37'11" E 43.19'
N 04°37'11" E 24.52'
N 04°37'11" E 24.52'
N 04°37'11" E 24.52







NOTE

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BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE REED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

Avoid cutting underground utility lines. It's costly.
Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE (USA)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT (PROJECT #106984) DATE

CLV DRAWING NO. _____

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
2030 E. FLAMINGO RD., SUITE 220
LAS VEGAS, NEVADA 89119-5160
TELEPHONE: (702) 804-2000 FAX: (702) 804-2299

I:\V24\DWR-Phase1\dwg\Unnot\DWR1d12.dwg

DESIGN: DT
DRAWN: DT
CHECK: STS/BAH
ISSUE DATE: 12-13-05
ISSUE EDITOR:
PLOT DATE: 12-13-05
PLOT TIME: 15:09:49

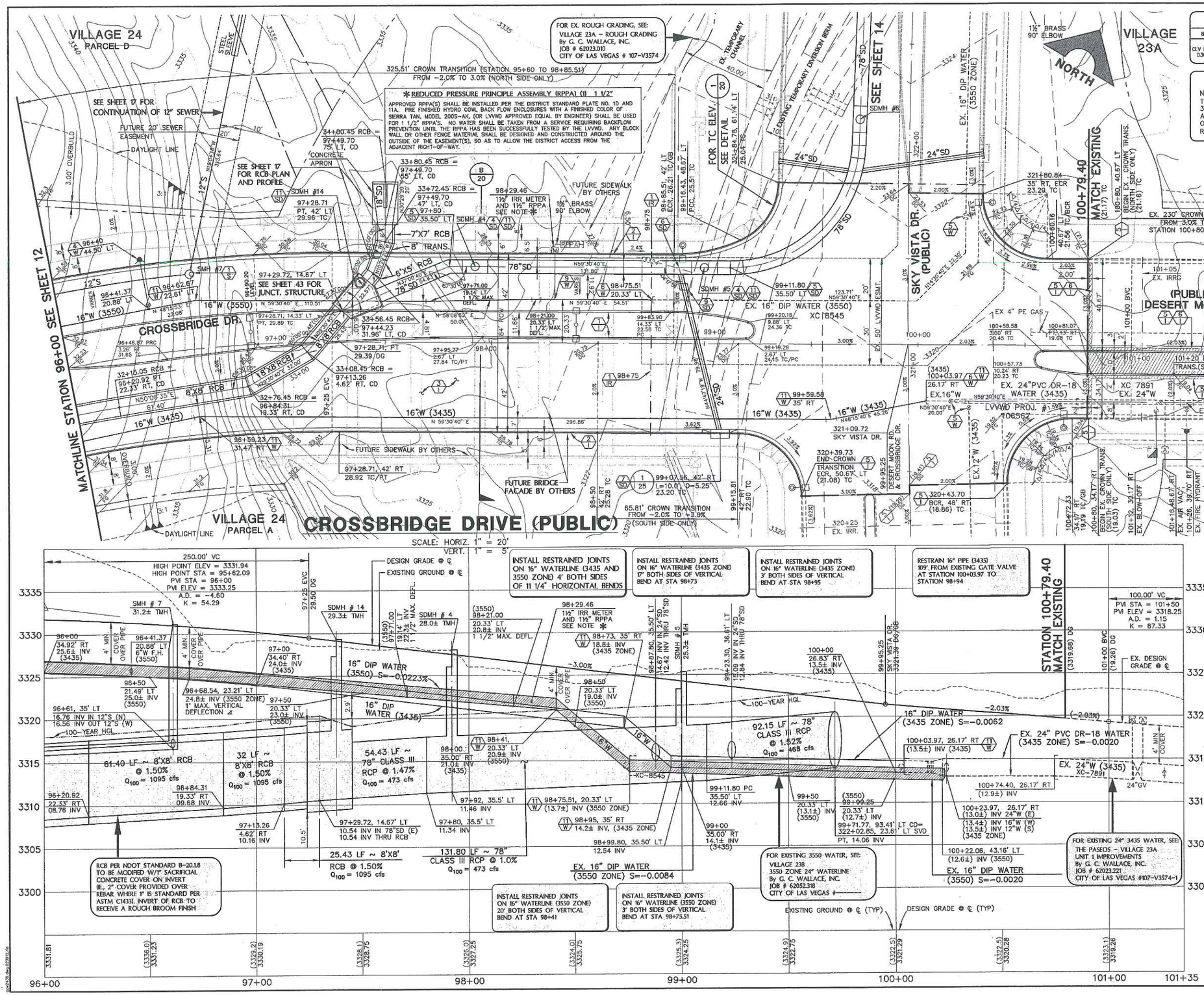
REV.	DATE	DESCRIPTION	DATE AGEN. APP	DATE IGNR. APP	DATE

90% SUBMITTAL - NOT FOR CONSTRUCTION

SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
CROSSBRIDGE DRIVE
PLAN AND PROFILE

JOB NO. 62A.24211

SHEET 12
12 OF 45 SHTS



BENCHMARK

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SCALE 20 0 20 40 FEET

Avoid cutting underground utility lines. It's costly. Call before you Dig. 1-800-227-2600 UNDERGROUND SERVICE (USA)

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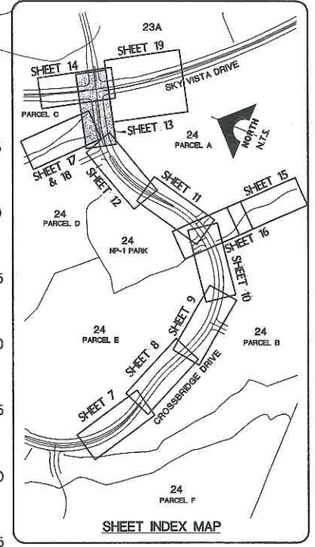

SHEET INDEX MAP

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APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT (PROJECT #106984) DATE

CLV DRAWING NO.

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299

SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
CROSSBRIDGE DRIVE
PLAN AND PROFILE

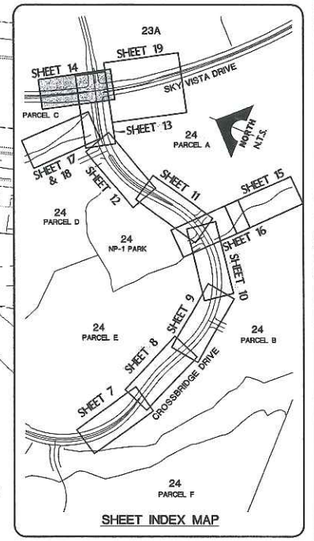
90% SUBMITTAL - NOT FOR CONSTRUCTION

DESIGN: QT
DRAWN: QT
CHECK: STS/BAH
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-13-05
PLOT TIME: 15:07:06

JOB NO. 62A24211

SHEET 13
13 OF 45 SHTS

VILLAGE 24
PARCEL A
FUT. 389.73' CROWN TRANSITION FROM 2.0% TO 3.0% (STATION 316+50 TO 320+39.73)
320+39.73 MATCH EXISTING
99+15.81 42' RT 22.90' TC
16"W (3435)
SEE SHEET 13
CROSSBRIDGE DR. (PUBLIC)
EX. 16" DIP WATER (3550) XC 8545
24"SD
78"SD
SDMH #5
99+95.25 DESERT MOON RD. & CROSSBRIDGE DR.
321+09.72 SKY VISTA DR.
EX. 50' LVVWD ESMT.
SKY VISTA DRIVE (PUBLIC)
EX. 12"W (3435)
LVVWD PROJ. #106567
EX. 16"W (3435)
EX. 24"PVC DR-18 WATER (3435)
SEE SHEET 13 FOR INTERSECTION GRADING
DESERT MOON RD. (PUBLIC)
320+43.70 MATCH EXISTING
101+00 BVC
101+05 EX. IRR.
VILLAGE 23A
FOR EXISTING IMPROVEMENTS, SEE: VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS By: G. C. WALLACE, INC. JOB # 62024.220 CITY OF LAS VEGAS # 107-V4292
FOR TC ELEVATIONS SEE DETAIL 1/20
321+84.78 LIMIT OF PAVEMENT
321+95, 61.05' LT FUT. D.I. 2/25 8/SD
470.28' CROWN TRANSITION FROM 3.0% TO -2.0% FROM 321+09.72 TO 325+80 (WEST SIDE ONLY)
N28°23'20"W 198.19'
323+15.00 BVC
EXISTING TEMPORARY CHANNEL
VARIES
SDMH #6 4/SD 11/SD
322+70 W 1½" IRR. METER AND 1½" RPPA SEE NOTE *
Δ = 5°08'22" R = 4393.00' L = 394.06' T = 197.16' XC 8545
EX. 16" DIP WATER (3550)
EX. 50' LVVWD ESMT.
321+70 W 27' RT
321+85 1/IR
322+00, 35' RT FUT. D.I. 2/25 8/SD
1½" BRASS 90° ELBOW
RPPA
321+80.84 LIMIT OF PAVEMENT
100+79.40 MATCH EXISTING
FOR EX. ROUGH GRADING, SEE: VILLAGE 23A – ROUGH GRADING By G. C. WALLACE, INC. JOB # 62023.010 CITY OF LAS VEGAS # 107-V3574
FOR EX. TEMP. DIVERSION BERM, SEE: VILLAGE 23A – ROUGH GRADING By G. C. WALLACE, INC. JOB # 62023.010 CITY OF LAS VEGAS # 107-V3574
FOR EXISTING IMPROVEMENTS, SEE: THE PASEOS – VILLAGE 23A UNIT 1 IMPROVEMENTS By G. C. WALLACE, INC. JOB # 62023.221 CITY OF LAS VEGAS #107-V3574-1
VILLAGE 24
PARCEL C
VILLAGE 23A
RIPRAP D50= 8" THICKNESS = 16"
324+50 24.21' LT
324+00 23.46' LT
324+37.53, 24.43' LT HORIZ. ∡ PT.
325+00 FUT. IRR.
EXISTING TEMPORARY DIVERSION BERM
TEMPORARY DRAINAGE INLET
NORTH
SCALE 20 0 20 40 FEET
* REDUCED PRESSURE PRINCIPLE ASSEMBLY (RPPA) (1) 1 1/2"
APPROVED RPPA(S) SHALL BE INSTALLED PER THE DISTRICT STANDARD PLATE NO. 1D AND 11A. PRE FINISHED HYDRO COWL BACK FLOW ENCLOSURES WITH A FINISHED COLOR OF SIERRA TAN, MODEL 2005-AK, (OR LVVWD APPROVED EQUAL BY ENGINEER) SHALL BE USED FOR 1 1/2" RPPA'S. NO WATER SHALL BE TAKEN FROM A SERVICE REQUIRING BACKFLOW PREVENTION UNTIL THE RPPA HAS BEEN SUCCESSFULLY TESTED BY THE LVVWD. ANY BLOCK WALL OR OTHER FENCE MATERIAL SHALL BE DESIGNED AND CONSTRUCTED AROUND THE OUTSIDE OF THE EASEMENT(S), SO AS TO ALLOW THE DISTRICT ACCESS FROM THE ADJACENT RIGHT-OF-WAY.



SHEET INDEX MAP

SKY VISTA DRIVE (PUBLIC)

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

320+39.73 MATCH EXISTING 19.29 DG
FOR EX. ROUGH GRADING, SEE: VILLAGE 23A – ROUGH GRADING By G. C. WALLACE, INC. JOB # 62023.010 CITY OF LAS VEGAS # 107-V3574
DESIGN GRADE @ ℄
EXISTING ROUGH GRADE @ ℄
321+09.72 DESERT MOON RD. & CROSSBRIDGE DR. 21.39 DG
321+45.32, 83.28' LT, SVD = 99+11.80, 35.50' LT, CD 12.66' INV
321+84.78 23.64 DG LIMIT OF PAVEMENT
322+02.85, 23.61' LT PT, 14.06' INV
322+14.78, 23.35' LT 14.40' INV
323+15 BVC [27.55 DG]
EXISTING DIVERSION BERM
FUTURE DESIGN GRADE @ ℄
EXISTING ROUGH GRADE @ ℄
SDMH # 6 25.0± TMH
100-YEAR HGL
198.19 LF 78" CLASS III RCP @ 2.80% Q_{100} = 468 cfs
8' MIN. COVER OVER PIPE
RIPRAP D50= 8" THICKNESS = 16"
EX. 16" DIP WATER S=-0.0020 (3550)
92.15 LF ~ 78" CLASS III RCP @ 1.52%
EX. 16" DIP WATER (3550 ZONE)
EX. 12"W (3435)
380+83.11, 28.40' RT (13.0±) INV 24"W (E) (13.4±) INV 16"W (W) (13.5±) INV 12"W (S) (3435 ZONE)
321+30.03 4.14' RT, EX. 16"W 45° BEND (3550) (12.7±) INV
321+52.90 27' RT, EX. 16"W (3550) 45° BEND
321+70, 27' RT GV (12.7±) INV
321+75 VERT. ∡ PT. (12.8±) INV
321+90.27, 25.27' LT 16.12 INV IN 24"SD (E & W) 13.87 INV THRU 78"SD
322+70 (3550) 1½" IRR. METER AND 1½" RPPA SEE NOTE *
323+00 (16.5±) INV
324+00, 23.46' LT 324+00, 27' RT (19.8±) INV
324+30 24.21' LT 20.2± FG
FOR EXISTING 3550 WATER, SEE: VILLAGE 23B 3550 ZONE 24" WATERLINE By: G. C. WALLACE, INC. JOB # 62052.318 CITY OF LAS VEGAS
EX. ROUGH GRADE @ ℄ (TYP)
DESIGN GRADE @ ℄ (TYP)
FUTURE DESIGN GRADE @ ℄ (TYP)
(3318.10) (3318.2) 3319.60 (3320.0) 3321.10 (3321.7) 3322.60 (3323.2) 3324.10 (3324.7) 3325.60 (3329.2) 3327.10 (3331.6) 3328.65 (3332.0) 3330.40 (3332.8) [3332.34] (3333.9) [3334.49]
320+00 321+00 322+00 323+00 324+00 325+00 325+35

NOTE

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APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT (PROJECT #106984) DATE

CLV DRAWING NO. _____

STATE OF NEVADA — BERT HARRIS HAMMOND — No. 10253 — PROFESSIONAL ENGINEER

NO.	DESCRIPTION	DATE	APP'D
1	90% SUBMITTAL - NOT FOR CONSTRUCTION	15.06.29	

DESIGN: GT
DRAWN: GT
CHECK: STS/BAH
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-13-05
PLOT TIME: 15:06:29

G. C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD.
LAS VEGAS, NEVADA 89146
(702) 804-2000 FAX: (702) 804-2299

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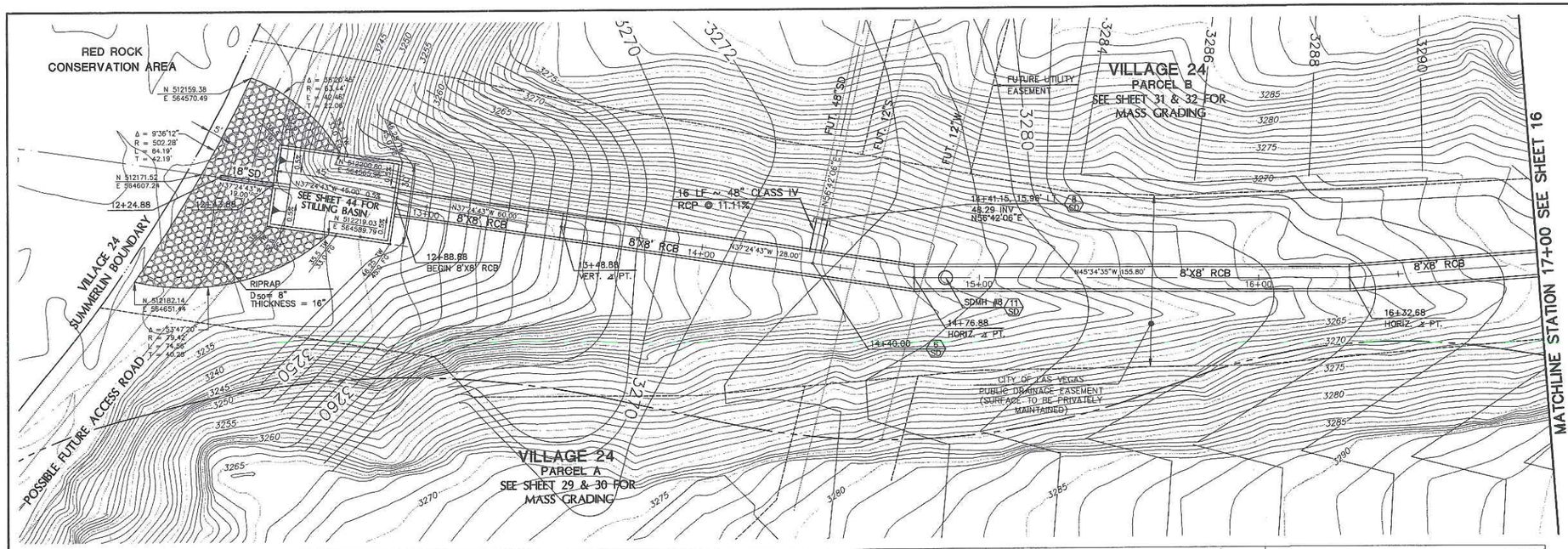
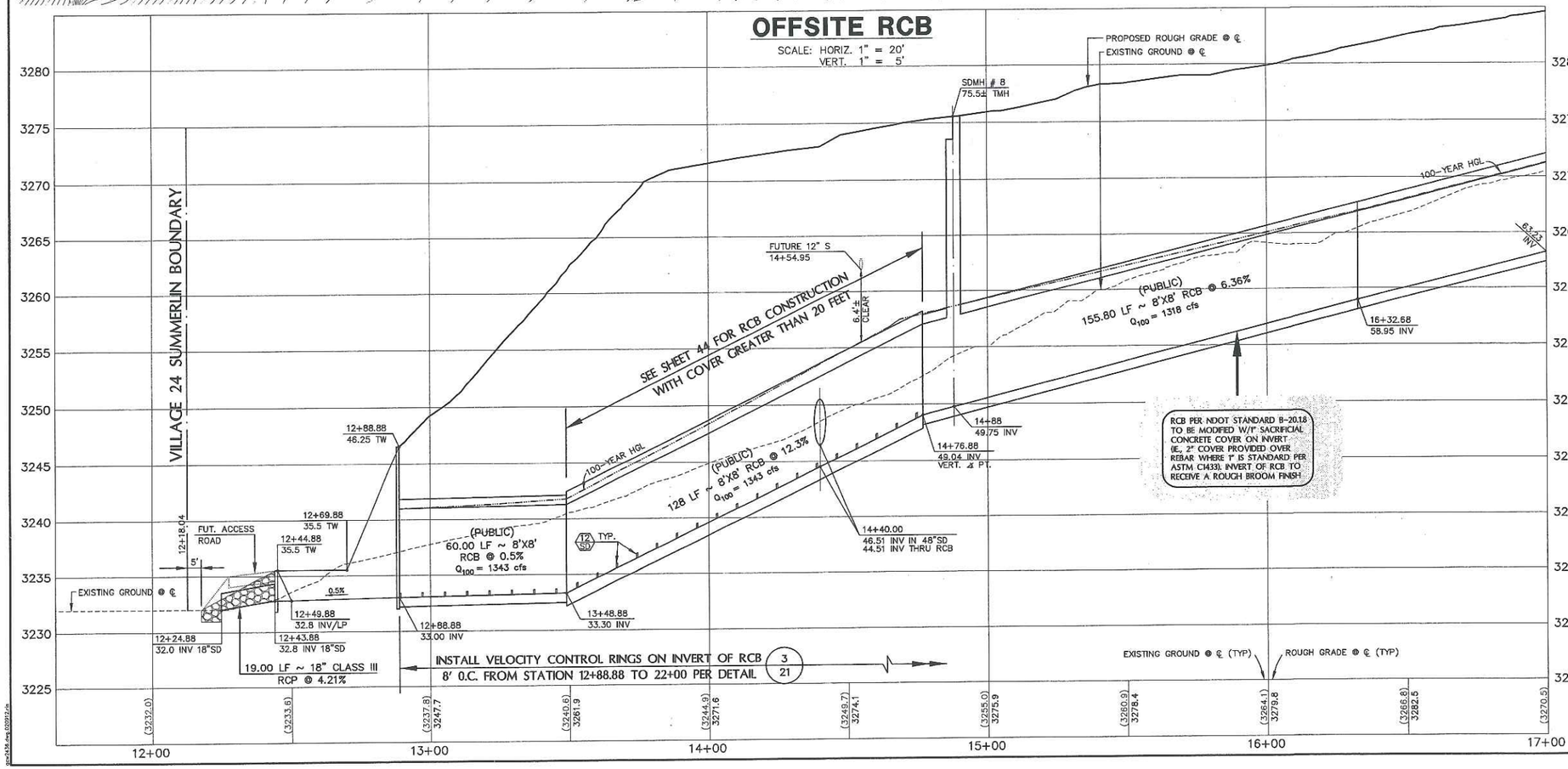
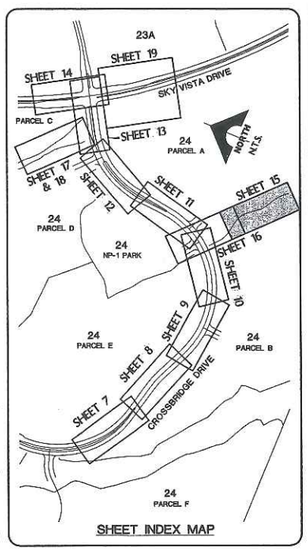
SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
SKY VISTA DRIVE
PLAN AND PROFILE
JOB NO. 62A.24211

SHEET 14
14 OF 45 SHTS







NORTH

SCALE 20 0 20 40 FEET

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1-702-227-2929

STATE OF NEVADA
BEN HUMES
No. 21100
PROFESSIONAL ENGINEER
DATE: 12/10/20

REV.	DATE	DESCRIPTION
		DATE AGEN. APP. DATE GCW APP.

90% SUBMITTAL - NOT FOR CONSTRUCTION

DESIGN: DT
DRAWN: DT
CHECK: STS/BAH
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 02-27-06
PLOT TIME: 11:26:59

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 FAX: (702) 804-2001
gpeterson
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SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
OFFSITE RCB
PLAN AND PROFILE

JOB NO. 62A24.211

SHEET 15
15 OF 45 SHTS

CLV DRAWING NO. _____

MATCHLINE STATION 17+00 SEE SHEET 15

VILLAGE 24
PARCEL B
SEE SHEET 31 & 32 FOR
MASS GRADING

VILLAGE 24
PARCEL A
SEE SHEET 29 & 30 FOR
MASS GRADING

CITY OF LAS VEGAS
PUBLIC DRAINAGE EASEMENT
(SURFACE TO BE PRIVATELY
MAINTAINED)

SEE SHEET 10 FOR
CONTINUATION
OF 8'X8' RCB

CROSSBRIDGE DR.

8'X8' RCB

SDMH #9

17+87.08
HORIZ. ∡ PT.

19+02.42
HORIZ. ∡ PT.

20+13.24
RCB

20+79.15, RCB =
85+12.62, 93.51' RT
CROSSBRIDGE DR.

SDMH #10

21+41.34, RCB =
85+45.56, 43.63' RT
CROSSBRIDGE DR.

21+62.77, RCB =
85+62, 31.14' RT
CROSSBRIDGE DR.

48"SD

24"SD

36"SD

16"W (3450)

16"W (3425)

10"S

NORTH

SCALE 20 0 20 40 FEET

OFFSITE RCB

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

21+18.40
CROSSBRIDGE DR.
LANDSCAPE LINE
16.5± FG

21+53.81
CROSSBRIDGE DR.
BACK OF CURB
16.25 TC

SDMH # 10
12.0± TMH

PROPOSED ROUGH GRADE @ ℄

EXISTING GROUND @ ℄

SEE SHEET 10 FOR
CONTINUATION OF 8'X8' RCB

SDMH # 9
89.5± TMH

100-YEAR HGL

(PUBLIC)
154.40 LF ~ 8'X8' RCB @ 6.36%
Q_{100} = 1318 cfs

(PUBLIC)
115.35 LF ~ 8'X8' RCB @ 6.36%
Q_{100} = 1318 cfs

(PUBLIC)
110.81 LF ~ 8'X8' RCB @ 6.36%

(PUBLIC)
149.53 LF ~ 8'X8' RCB
@ 4.65%
Q_{100} = 1318 cfs

(PUBLIC)
66.67 LF ~ 8'X8'
RCB @ 1.50%
Q_{100} = 1185 cfs

Q_{100} = 1195 cfs

12" SD TYP.

18+00
69.59 INV

17+87.08
68.77 INV

19+02.42
76.10 INV

20+13.24
83.15 INV
VERT. ∡ PT.

21+00
87.18 INV

20+79.15, RCB =
85+12.62, 93.51' RT
CROSSBRIDGE DR.
88.21 INV IN 48"SD (N)
86.21 INV THRU RCB

21+41.34, RCB =
85+45.56, 43.63' RT
CROSSBRIDGE DR.
89.10 INV THRU RCB

21+62.77, RCB =
85+62, 31.14' RT
CROSSBRIDGE DR.
90.10 INV
VERT. ∡ PT.

22+29.44 RCB =
86+23.64, 13.50' RT
CROSSBRIDGE DR.
91.10 INV

RCB PER NDOT STANDARD B-20.1.8
TO BE MODIFIED W/1" SACRIFICIAL
CONCRETE COVER ON INVERT
(IE., 2" COVER PROVIDED OVER
REBAR WHERE 1" IS STANDARD PER
ASTM C1433). INVERT OF RCB TO
RECEIVE A ROUGH BROOM FINISH

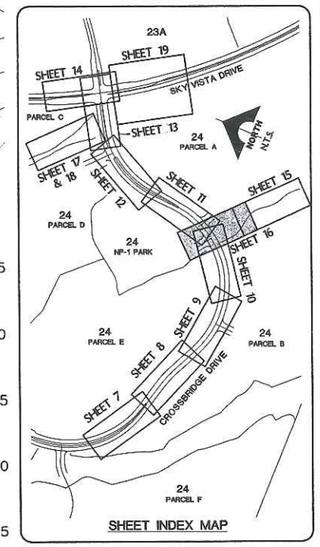
INSTALL VELOCITY CONTROL RINGS ON INVERT OF RCB (3/21)
8' O.C. FROM STATION 12+88.88 TO 22+00 PER DETAIL

EXISTING GROUND @ ℄ (TYP)

ROUGH GRADE @ ℄ (TYP)

3284.6 | (3274.4) 3286.9 | (3277.5) 3289.5 | (3281.8) 3292.8 | (3284.7) 3296.5 | (3288.0) 3299.5 | (3291.9) 3302.0 | (3301.9) 3305.2 | (3313.0) | (3316.2) | (3320.3)

17+00 18+00 19+00 20+00 21+00 22+00



SHEET INDEX MAP

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G. C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD., LAS VEGAS, NEVADA 89146
(702) 804-8000 • FAX: (702) 804-8099
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ENGINEER - STATE OF NEVADA
BERT E. WALLACE
No. 7244
REGISTERED PROFESSIONAL
CIVIL
DATE: 12/1/06

DESCRIPTION	REV.	DATE	DATE AGEN. APP	DATE ADM. APP

DESIGN: GT
DRAWN: GT
CHECK: STS/BAH
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 02-27-06
PLOT TIME: 10:40:06

90% SUBMITTAL - NOT FOR CONSTRUCTION

SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
OFFSITE RCB
PLAN AND PROFILE

JOB NO. 62A.24211

SHEET
16
16 OF 45 SHTS

CLV DRAWING NO. _____

SEE SHEET 13 FOR CONTINUATION OF RCB

FOR OFFSITE SEWER LATERAL PROFILE, SEE 3/25

VILLAGE 24 PARCEL D

SHADING DENOTES AREA TO BE COVERED WITH D50=6", 12" THICK RIP-RAP

CROSSBRIDGE DR.

8'X8' RCB

6'X5' RCB

8' TRANS.

78" SD

16" W (3550)

24" SD

20' SEWER EASEMENT

BEGIN STEEL SLEEVE
N 513978.934
E 564263.272

5' DROP STRUCTURE

4.5' DROP STRUCTURE

VILLAGE 24
N 514101.572
E 564197.737
COS-2

SEE SHEET 45 FOR RCB INLET DETAIL

BOTTOM OF WASH @ 12.2±

18" SD

12" SD

SMH #8
N 514173.966
E 564214.840

STEEL SLEEVE

END STEEL SLEEVE
N 514163.166
E 564218.575

BERM

10' MIN.

FUTURE ROAD
40.0 FG

SEE SHEET 18 FOR GRADING PLAN

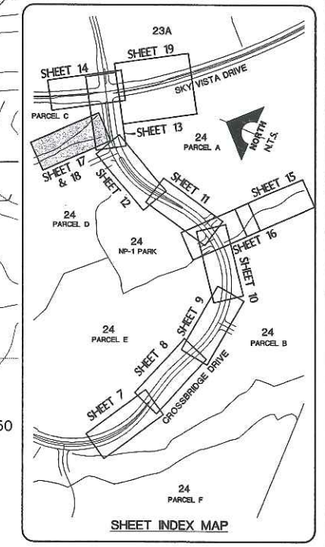
= BOULDER (BY OTHERS)

VILLAGE 24
PARCEL G

MAINTENANCE ACCESS ROAD

NORTH

SCALE 20 0 20 40 FEET



SHEET INDEX MAP

OFFSITE RCB

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

RCB PER NDOT STANDARD B-20.1.8 TO BE MODIFIED W/1" SACRIFICIAL CONCRETE COVER ON INVERT (IE, 2" COVER PROVIDED OVER REBAR WHERE 1" IS STANDARD PER ASTM C1433. INVERT OF RCB TO RECEIVE A ROUGH BROOM FINISH

33+14.59 RCB = 97+17.32 CROSSBRIDGE DR. 29.72 DG

33+40.31 16"W (3550) 22.0 INV

33+67.13 RCB = 97+47.88, 42' LT CROSSBRIDGE DR. 29.49 TC

SDMH # 14 29.3± TMH

EXISTING GROUND @ ℄ OF RCB

ROUGH GRADE @ ℄ OF RCB

100-YEAR HGL

22.57' LF ~ 6'X5' RCB @ 1.50%
Q_{100} = 668 cfs

25.43LF ~ 8'X8' RCB @ 1.50%
Q_{100} = 1095 cfs

SEE SHEET 43 FOR JUNCTION STRUCTURE

8 LF ~ 6'X5' RCB @ 1.50%
Q_{100} = 668 cfs

8' TRANS. @ 1.50%
Q_{100} = 668 cfs

8 LF ~ 7'X7' RCB @ 4.75%
Q_{100} = 668 cfs

32 LF ~ 8'X8' RCB @ 1.50%
Q_{100} = 1095 cfs

32+76.45 RCB = 96+84.31
19.33' RT, CD
09.68 INV
HORIZ. ℄ PT.

33+08.45 RCB = 97+13.26
4.62' RT, CD
10.16 INV
HORIZ. ℄ PT.

34+00.45 RCB = 97+49.70, 75' LT, CD
17.0 FG

34+00.45 RCB
12.00 INV 18" SD

11' LF 18"SD @ 2.5%
33+80.45 RCB = 97+49.70, 55' LT, CD
11.50 INV

33+72.45 RCB = 97+49.70, 47' LT, CD
END 8' TRANSITION FROM 6'X5' RCB TO 7'X7' RCB
11.12 INV, HORIZ. ℄ PT.

33+33.87 RCB = 97+29.72, 14.67' LT, CD
10.54 INV IN 78"SD (E), 10.54 INV THRU RCB

33+47.97, 1.28' LT = 97+37.80, 26.30' LT
10.75 INV

33+64.45 RCB = 97+46.96, 39.48' LT

BEGIN 8' TRANSITION FROM 6'X5' TO 7'X7' RCB
11.00 INV

33+56.45 RCB = 97+44.23, 31.96' LT, CD
10.88 INV, HORIZ. ℄ PT.

5' DROP STRUCTURE

STEEL SLEEVE

12" SEWER 20.47 INV

EXISTING GROUND @ ℄ OF RCB (TYP)

ROUGH GRADE @ ℄ OF RCB (TYP)

(3334.8) (3328.7) (3329.9) (3330.7) 3312.2 (3334.6) 3312.5 (3336.9) 3319.0 (3338.4) 3323.4 (3340.5) 3328.1 (3343.0) 3334.8 (3345.9) 3340.5 (3348.0) 3342.9

32+15 33+00 34+00 35+00 36+00 37+00 37+50

NOTE

THIS SET OF DRAWINGS IS BASED UPON NAVD 88 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. DJ68 .3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

Avoid cutting underground utility lines. It's costly.
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UNDERGROUND SERVICE (USA)

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CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE
(PROJECT #106984)

CLV DRAWING NO. _____

PE 14536 exp. 03/31/16
STATE OF NEVADA
BERT HIGHLEY
CIVIL
REGISTERED PROFESSIONAL ENGINEER
DATE 11-16-15

REV.	DATE	DESCRIPTION
		90% SUBMITTAL - NOT FOR CONSTRUCTION

DESIGN: GT/GP
DRAWN: GT/GP
CHECK: STS/BAH
ISSUE DATE:
ISSUE EDITION: 11-09-15
PLOT DATE: 11-09-15

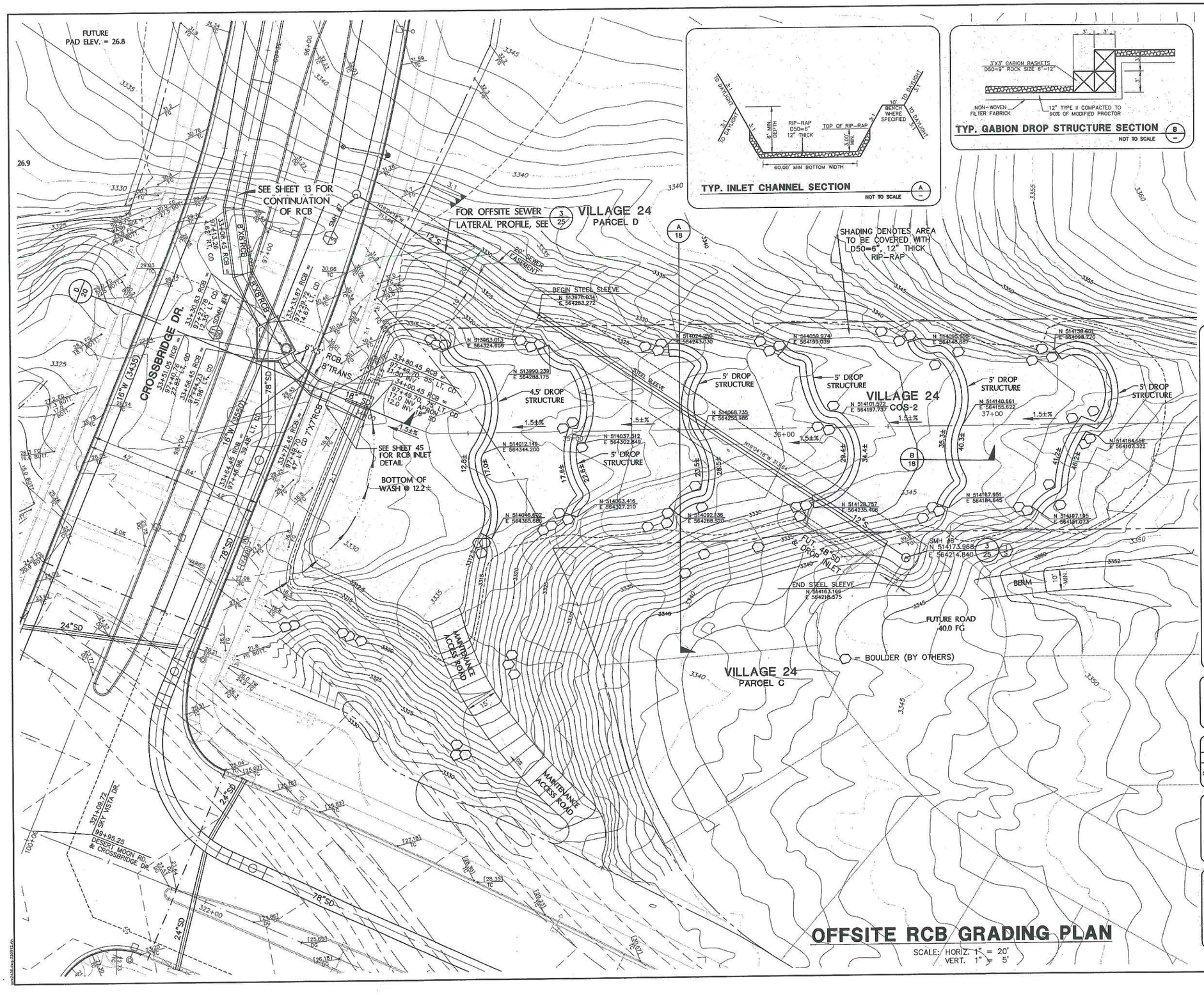
G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2099

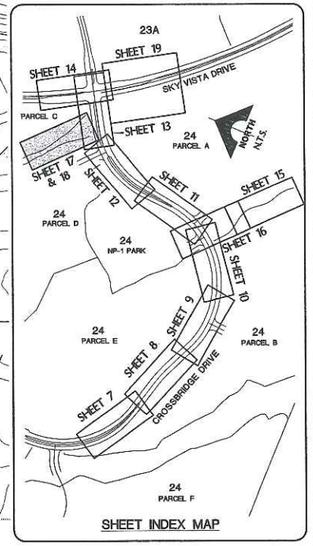
I:\V24\Utilities\Civil\Phase1\Dwg\Vmps\VMPHS17.dwg

SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
OFFSITE RCB
PLAN AND PROFILE

JOB NO. 62A.24.211

SHEET 17
17 OF 45 SHTS





NOTE

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BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 J	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

Avoid cutting underground utility lines. It's costly. Call before you Dig. 1-800-227-2600 UNDERGROUND SERVICE (USA)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY. CALL BEFORE YOU DO OVERHEAD 1-702-227-2929

OFFSITE RCB GRADING PLAN

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'

CLV DRAWING NO. _____

STATE OF NEVADA — BENT H. MARTIN — No. 10324 — PROFESSIONAL ENGINEER — DATE: 1/16

REV.	DATE	DESCRIPTION
		90% SUBMITTAL - NOT FOR CONSTRUCTION

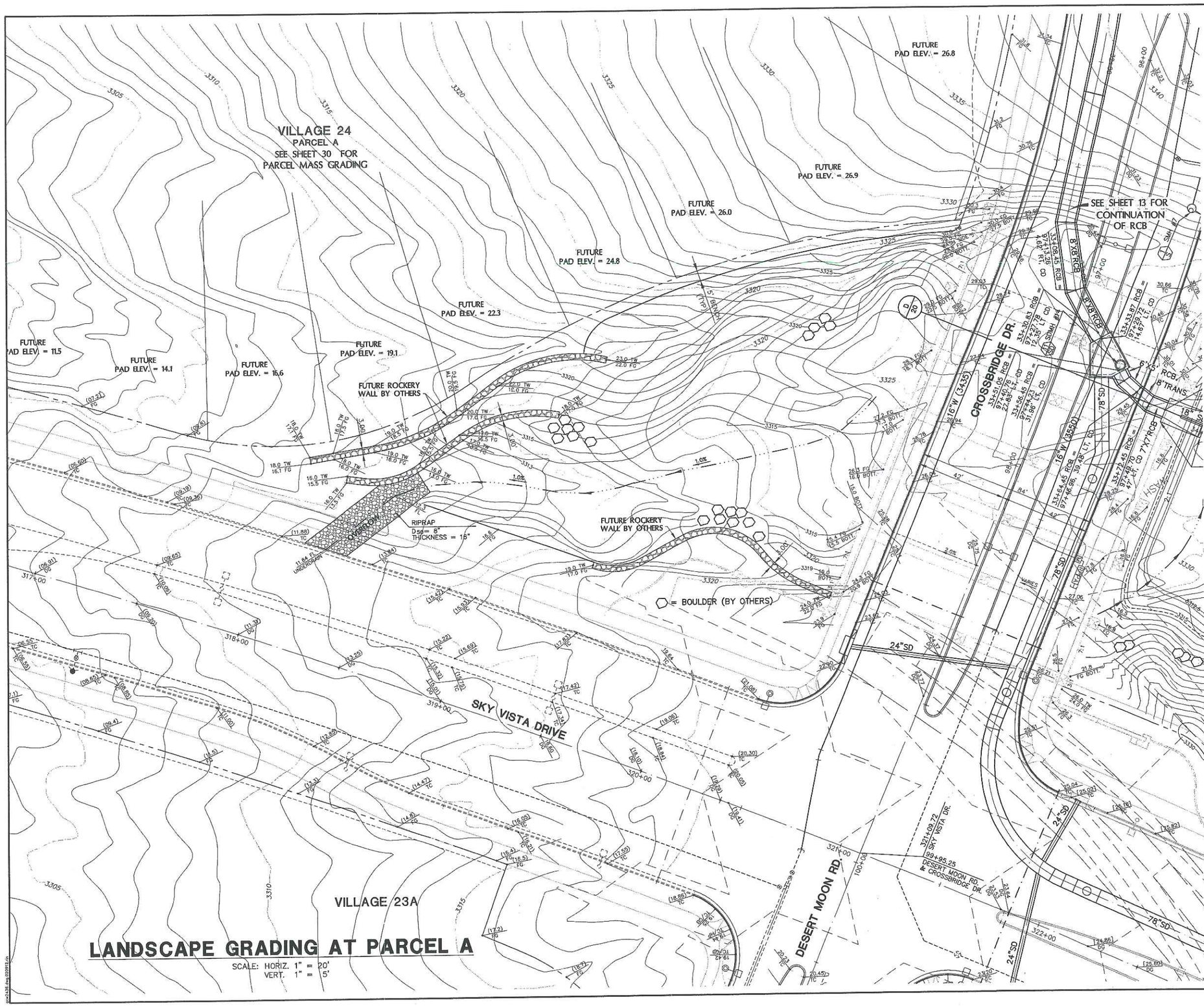
DESIGN: BAH
DRAWN: GT/GP
CHECK: STS/BAH
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-08-06
PLOT TIME: 10:29:07

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
(702) 804-8000 • FAX: (702) 804-8008
I:\v24\Civil\Phase1\dwg\Vmaps\plot\c018.dwg mfang

SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
OFFSITE RCB GRADING PLAN

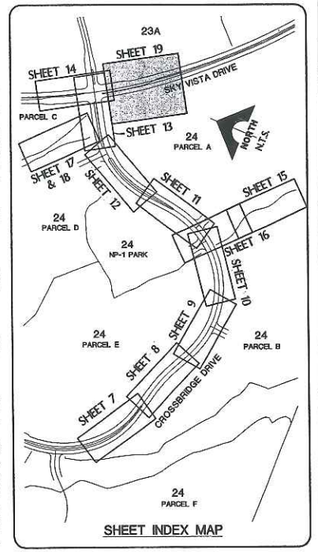
SHEET 18
18 OF 45 SHTS

JOB NO. 62A.24.211



LANDSCAPE GRADING AT PARCEL A

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'



SHEET INDEX MAP

NOTE

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BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

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CLV DRAWING NO.

DESIGN: BAH
DRAWN: QT/GP
CHECK: STS/BAH
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-08-05
PLOT TIME: 11:35:54

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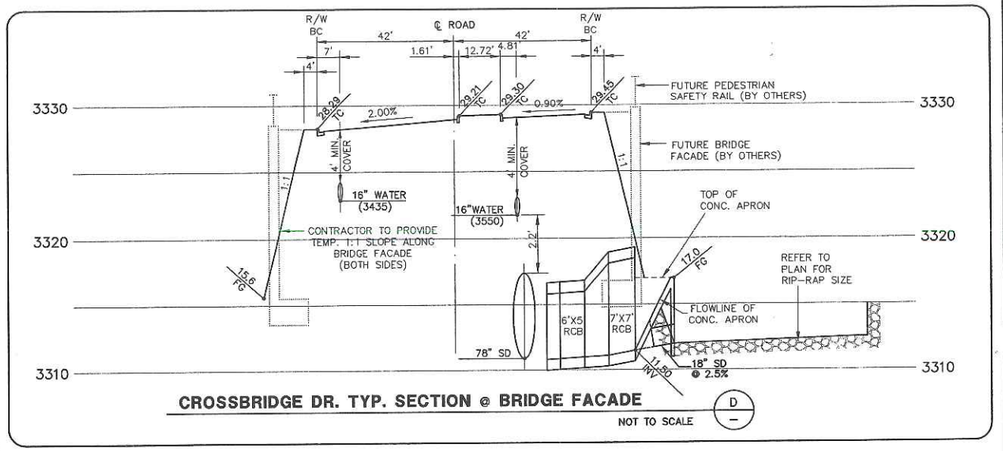
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299

SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
LANDSCAPE GRADING AT PARCEL A

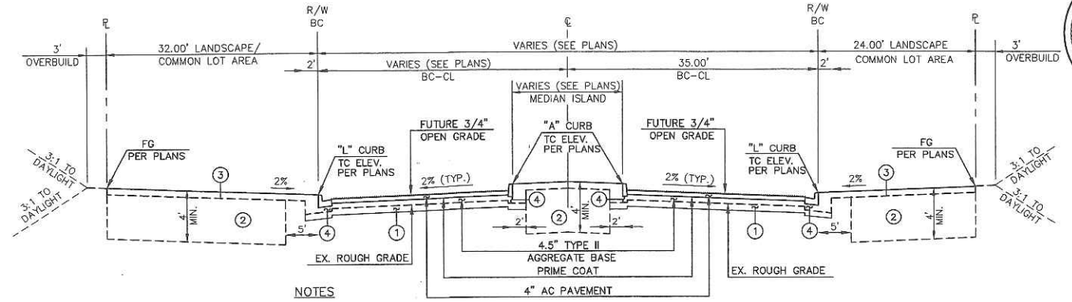
JOB NO. 62A.24.211

SHEET 19
19 OF 45 SHTS



CROSSBRIDGE DR. TYP. SECTION @ BRIDGE FACADE

NOT TO SCALE (D / —)



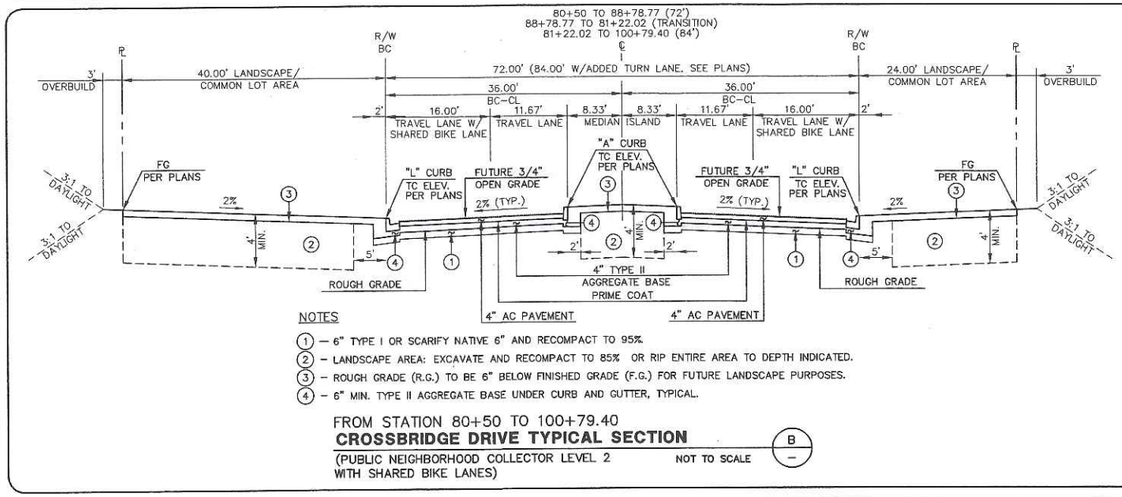
NOTES

(1) — 6" TYPE I OR SCARIFY NATIVE 6" AND RECOMPACT TO 95%.
(2) – LANDSCAPE AREA: EXCAVATE AND RECOMPACT TO 85% OR RIP ENTIRE AREA TO DEPTH INDICATED.
(3) – ROUGH GRADE (R.G.) TO BE 6" BELOW FINISHED GRADE (F.G.) FOR FUTURE LANDSCAPE PURPOSES.
(4) – 6" MIN. TYPE II AGGREGATE BASE UNDER CURB AND GUTTER, TYPICAL.

SKY VISTA DRIVE TYPICAL SECTION

(PUBLIC NEIGHBORHOOD ARTERIAL WITH BIKE LANES)

NOT TO SCALE (C / —)



NOTES

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(2) – LANDSCAPE AREA: EXCAVATE AND RECOMPACT TO 85% OR RIP ENTIRE AREA TO DEPTH INDICATED.
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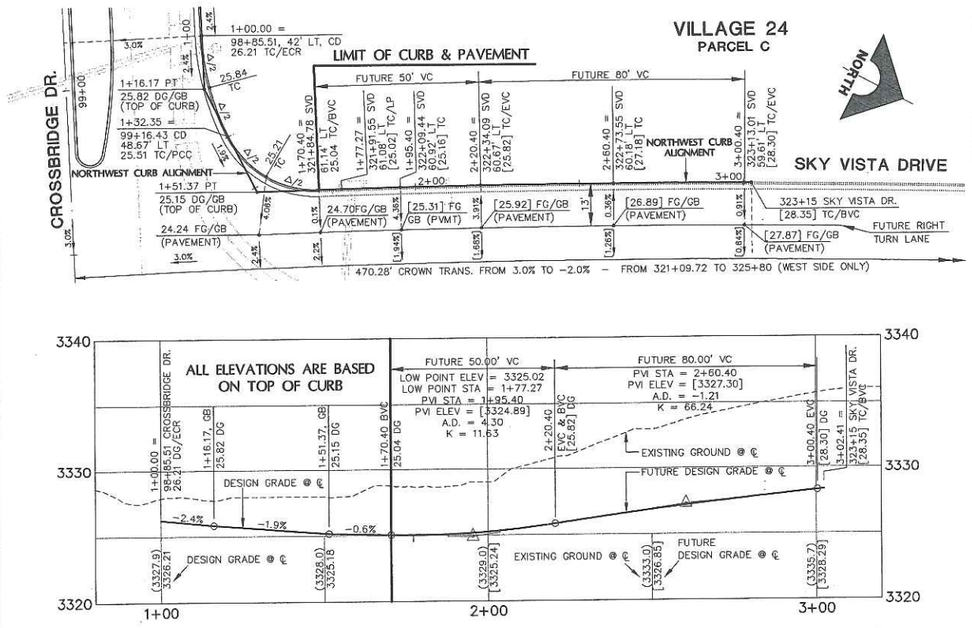
(4) – 6" MIN. TYPE II AGGREGATE BASE UNDER CURB AND GUTTER, TYPICAL.

FROM STATION 80+50 TO 100+79.40

CROSSBRIDGE DRIVE TYPICAL SECTION

(PUBLIC NEIGHBORHOOD COLLECTOR LEVEL 2 WITH SHARED BIKE LANES)

NOT TO SCALE (B / —)

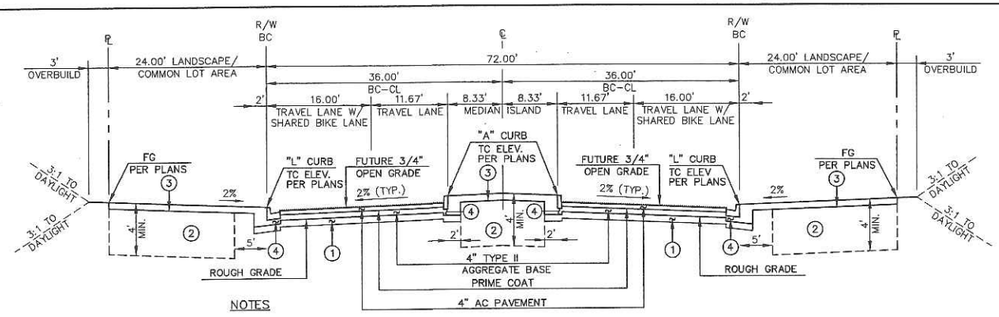


NORTHWEST CURB PLAN & PROFILE

CROSSBRIDGE DR. & SKY VISTA DR. INTERSECTION SCALE: HORIZ. 1"=20' VERT. 1"=5'

(1 / —)

SCALE 20 0 20 40 FEET



NOTES

(1) — 6" TYPE I OR SCARIFY NATIVE 6" AND RECOMPACT TO 95%.
(2) – LANDSCAPE AREA: EXCAVATE AND RECOMPACT TO 85% OR RIP ENTIRE AREA TO DEPTH INDICATED.
(3) – ROUGH GRADE (R.G.) TO BE 6" BELOW FINISHED GRADE (F.G.) FOR FUTURE LANDSCAPE PURPOSES.
(4) – 6" MIN. TYPE II AGGREGATE BASE UNDER CURB AND GUTTER, TYPICAL.

FROM STATION 68+00 TO 80+50

CROSSBRIDGE DRIVE TYPICAL SECTION

(PUBLIC NEIGHBORHOOD COLLECTOR LEVEL 2 WITH SHARED BIKE LANES)

NOT TO SCALE (A / —)

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT (PROJECT #106984) DATE

CLV DRAWING NO.

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299

DESIGN: DT
DRAWN: DT
CHECK: STS/RAH
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-07-05
PLOT TIME: 16:42:45

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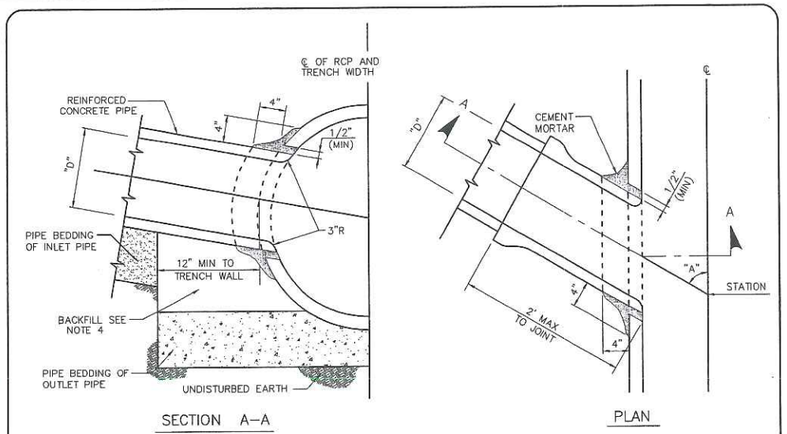
SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
TYPICAL SECTIONS AND MISCELLANEOUS DETAILS

JOB NO. 62A-24.211

SHEET 20
20 OF 45 SHTS

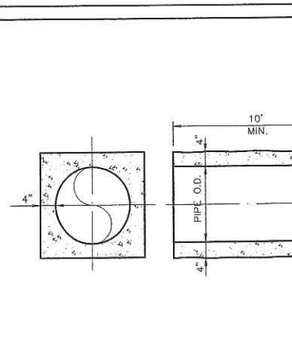


SECTION A–A PLAN

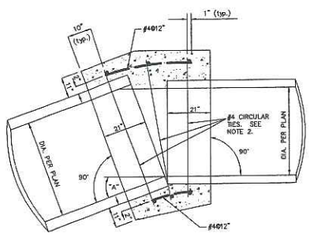
NOTES:

1. ANGLE "A" SHALL BE BETWEEN 45° AND 90° AND "D" SHALL BE 24" OR LESS, IN NO CASE SHALL THE OUTSIDE DIAMETER OF THE INLET PIPE EXCEED 1/2 THE INSIDE DIAMETER OF THE MAIN STORM DRAIN PIPE.
2. THE OPENING INTO THE MAIN STORM DRAIN SHALL BE THE OUTSIDE DIAMETER OF THE INLET PIPE PLUS 1" MIN OR 3" MAX.
3. BURN OR CHIP END OF INLET PIPE FLUSH WITH INNER SURFACE OF MAINLINE PIPE. ROUND EDGES OF MAIN LINE AND INLET PIPE.
4. BACKFILL WITH SLURRY CONTAINING MINIMUM 1 1/2 SACKS P.C./C.Y. SLURRY BACK SHALL NOT EXTEND PAST JOINT LOCATION OF INLET PIPE.

PIPE JUNCTION DETAIL (7)
NOT TO SCALE



CONCRETE ENCASEMENT DETAIL (6)
NOT TO SCALE



PLAN

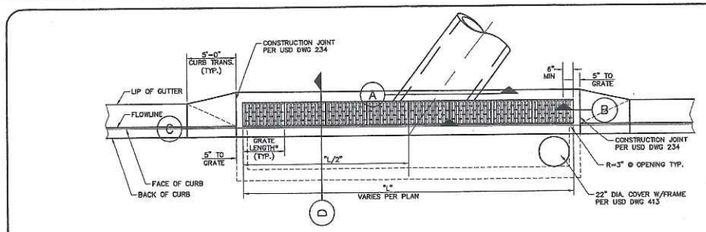
NOTES:

1. WHERE THE SLOPE OF THE UPSTREAM PIPE IS GREATER THAN THE SLOPE OF THE DOWNSTREAM PIPE, JOIN SOFFITS. WHERE THE SLOPE OF THE UPSTREAM PIPE IS LESS THAN THE SLOPE OF THE DOWNSTREAM PIPE, JOIN INVERTS.
2. WHERE THE SPACE BETWEEN THE PIPE EXTREMITIES EXCEEDS 2 1/2 INCHES, THE NUMBER OF CIRCULAR TIES SHALL BE INCREASED TO MAINTAIN A MAXIMUM SPACING OF 6 INCHES CENTER TO CENTER. CIRCULAR TIES SHALL HAVE A DIAMETER 5 INCHES GREATER THAN THE OUTSIDE DIAMETER OF THE LARGER PIPE.
3. CONTRACTOR TO USE CONCRETE COLLAR WHEN CONNECTING TO AN EXISTING STUB WHERE A FIELD ADJUSTMENT IS NEEDED. ANGLE "A" SHALL NOT EXCEED 45°.

CIRCULAR TIES:

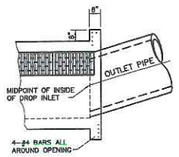
PIPE DIAMETER	SPACE BETWEEN PIPE EXTREMITIES	NO. OF CIRCULAR TIES
21" or less	2 1/2"	3
24" to 30"	2 1/2" or less	3
33" to 57"	2 1/2" or less	4
60" to 66"	2 1/2" or less	5

CONCRETE COLLAR DETAIL (5)
NOT TO SCALE

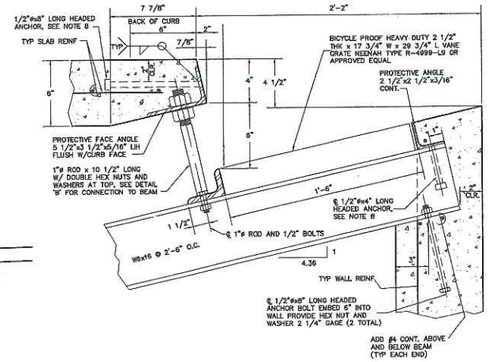


*FOR GRATE LENGTH SEE DROP INLET GRATE SCHEDULE

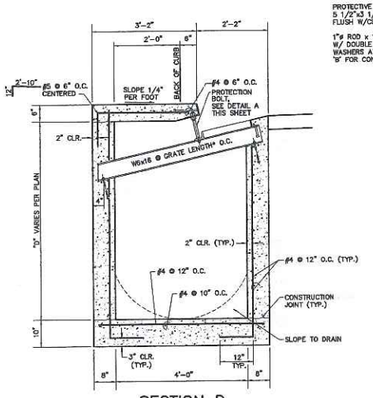
DROP INLET LAYOUT PLAN
NOT TO SCALE



END CONNECTION DETAIL
NOT TO SCALE



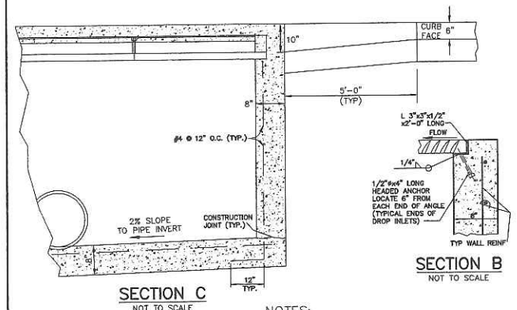
DETAIL A – PROTECTIVE FACE & ROD
NOT TO SCALE



SECTION D
NOT TO SCALE

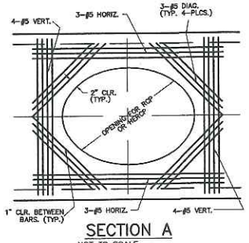


DETAIL B
NOT TO SCALE



SECTION C
NOT TO SCALE

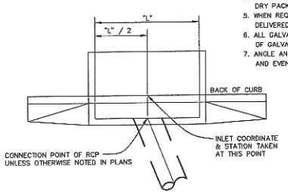
SECTION B
NOT TO SCALE



SECTION A
NOT TO SCALE

NOTES:

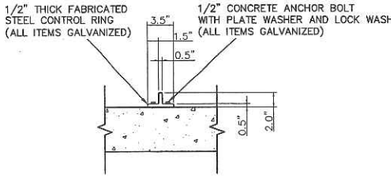
1. CONCRETE SHALL BE CLASS "D" OR "DA".
2. OUTLET PIPE SHALL BE TRIMMED FLUSH WITH INSIDE FACE OF INLET.
3. ALL EXPOSED METALS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
4. PROVIDE 1/2" (MIN.) CLEARANCE ALL AROUND THE STEEL BEAM, DRY PACK AFTER INSTALLATION.
5. WHEN REQUIRED BY THE LENGTH OF OPENING, PLATE ANGLE MAY BE DELIVERED IN SECTIONS AND BUTT WELDED IN PLACE.
6. ALL GALVANIZING DAMAGED BY WELDING SHALL RECEIVE TWO COATS OF GALVALLOY OR EQUAL.
7. ANGLE ANCHORS SHALL BE EMBEDDED MIDPOINT IN EACH ENDWALL AND EVENLY SPACED (MAXIMUM SPACING OF 2').



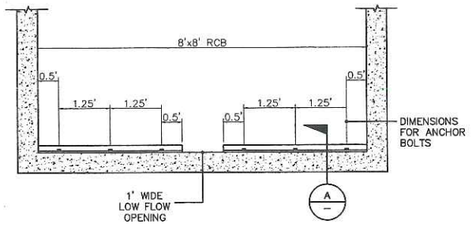
DROP INLET GRATE SCHEDULE

STATION/OFFSET	"L"	GRATE LENGTH	NO. OF GRATES
68+48.85, 38.00 L	5.0'	2.50'	2
69+48.85, 38.00 R	5.0'	2.50'	2
72+88.00, 38.00 L	12.5'	2.50'	5
72+88.00, 38.00 R	12.5'	2.50'	5
79+95.00, 38.00 L	10.0'	2.50'	4
79+95.00, 38.00 R	10.0'	2.50'	4
84+64.32, 38.00 L	5.0'	2.50'	2
84+64.32, 38.00 R	5.0'	2.50'	2
90+60.00, 40.47 L	10.0'	2.50'	4
90+60.00, 40.47 R	10.0'	2.50'	4
99+07.56, 42.00 R	10.0'	2.50'	4

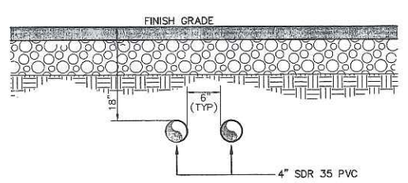
TYPE "CM" DROP INLET (4)
NOT TO SCALE



SECTION (A)

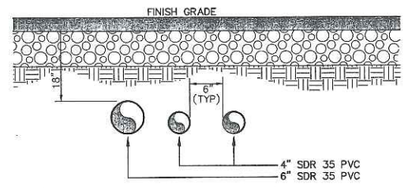


VELOCITY CONTROL RING (3)
8' X 8' RCB
NOT TO SCALE



NOTE:
CONTRACTOR TO EXTEND SLEEVES 1' (12") BEHIND BACK OF CURB, TYP.

IRRIGATION SLEEVE (2)
BANK "B"
NOT TO SCALE



NOTE:
CONTRACTOR TO EXTEND SLEEVES 1' (12") BEHIND BACK OF CURB, TYP.

IRRIGATION SLEEVE (1)
BANK "A"
NOT TO SCALE

APPROVAL:

LAS VEGAS VALLEY WATER DISTRICT (PROJECT #106984) DATE

CLV DRAWING NO.

STATE OF NEVADA — BEST HUMPHREY JAY — No. 9020 — PROFESSIONAL ENGINEER — CIVIL

DATE: 1/10/06

REV	DATE	DESCRIPTION	DATE AGEN. APP	DATE COW. APP

DESIGN:
DRAWN:
CHECK:
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-07-05
PLOT TIME: 16:42:32

90% SUBMITTAL – NOT FOR CONSTRUCTION

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD, LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299

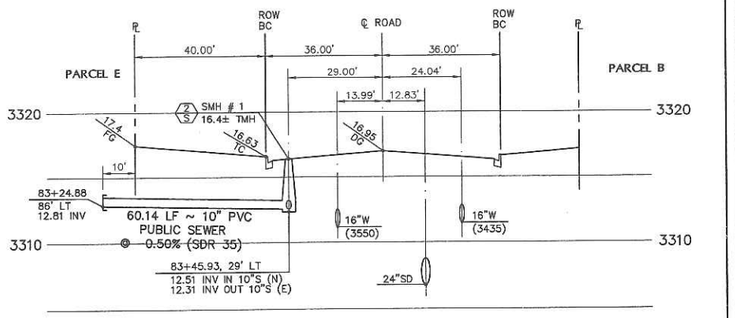
G:\V24\DWR-Phase4\dwg\xmrgs\DWR1c021.dwg mfeng

SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
MISCELLANEOUS DETAILS

JOB NO. 62A.24.211

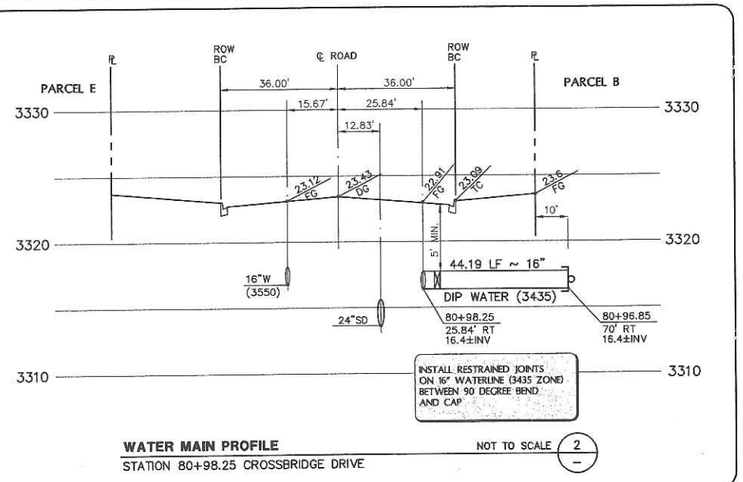
SHEET 21
21 OF 45 SHTS

dwr426.dwg 102912.dn



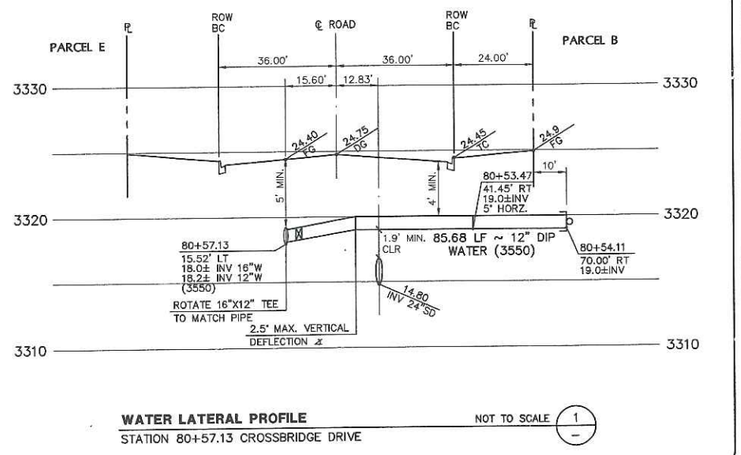
SEWER LATERAL PROFILE NOT TO SCALE (3)

STATION 83+45.93 CROSSBRIDGE DRIVE



WATER MAIN PROFILE NOT TO SCALE (2)

STATION 80+98.25 CROSSBRIDGE DRIVE



WATER LATERAL PROFILE NOT TO SCALE (1)

STATION 80+57.13 CROSSBRIDGE DRIVE

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

NOTE

THIS SET OF DRAWINGS IS BASED UPON NAVD 88 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

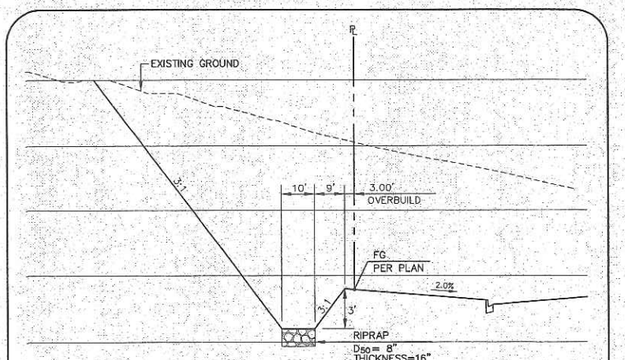
BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

Avoid cutting underground utility lines. It's costly.
Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE (USA)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

20 0 20 40
SCALE FEET

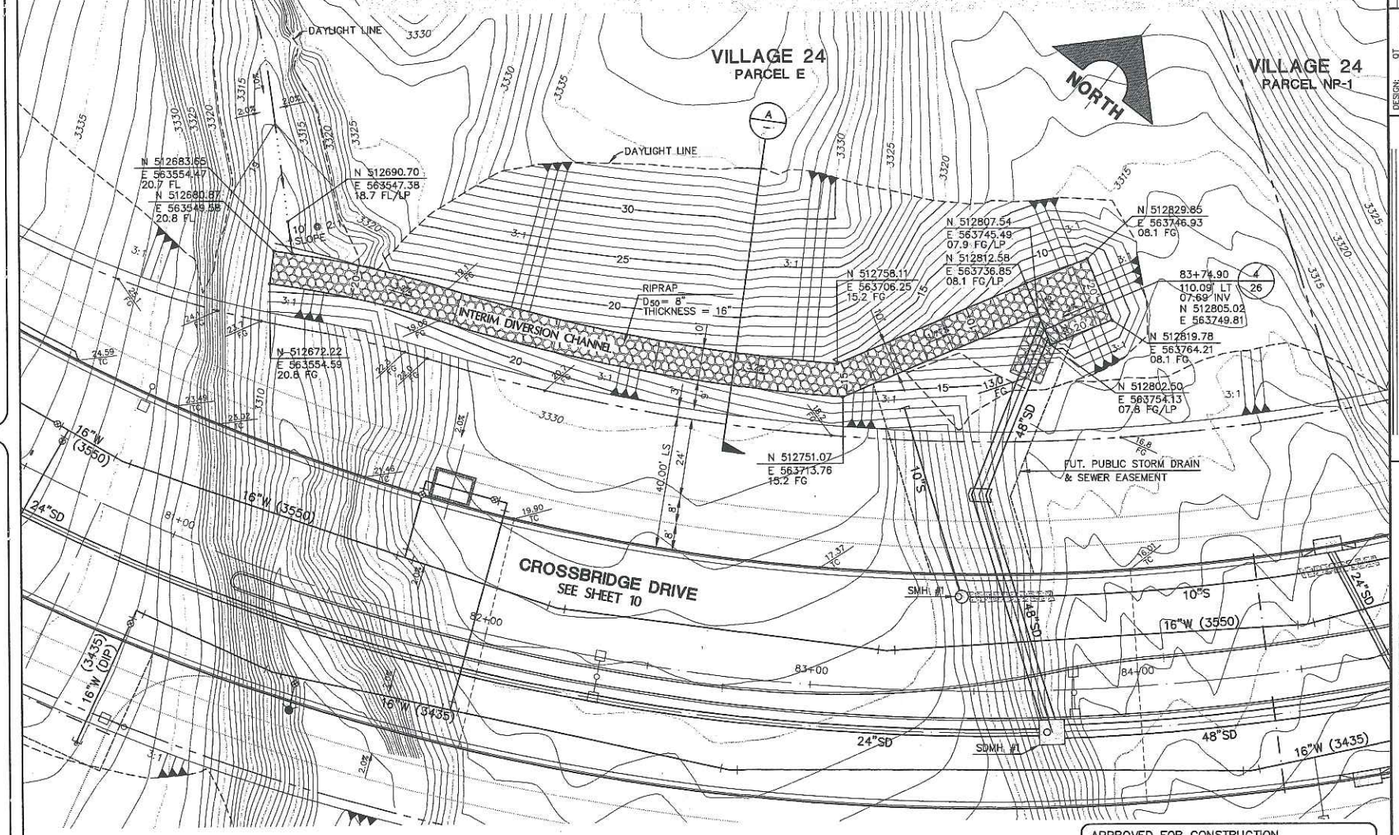


INTERIM DIVERSION CHANNEL TYPICAL SECTION (A)

NOT TO SCALE

INTERIM DIVERSION CHANNEL PLAN

SCALE: 1" = 20'



APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT (PROJECT #106984) DATE

CLV DRAWING NO.

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA, 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299

DESIGN: GT
DRAWN: GT/DN
CHECK: STS/BAH
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-08-05
PLOT TIME: 11:36:56

DATE: 1 | 10 | 05

DESCRIPTION	DATE	APP.

90% SUBMITTAL - NOT FOR CONSTRUCTION

SUMMERLIN

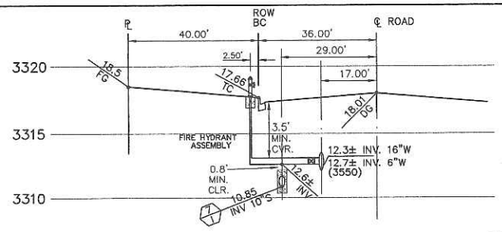
VILLAGE 24 UNIT 1 IMPROVEMENTS

INTERIM DIVERSION CHANNEL PLAN, AND LATERAL PROFILES I

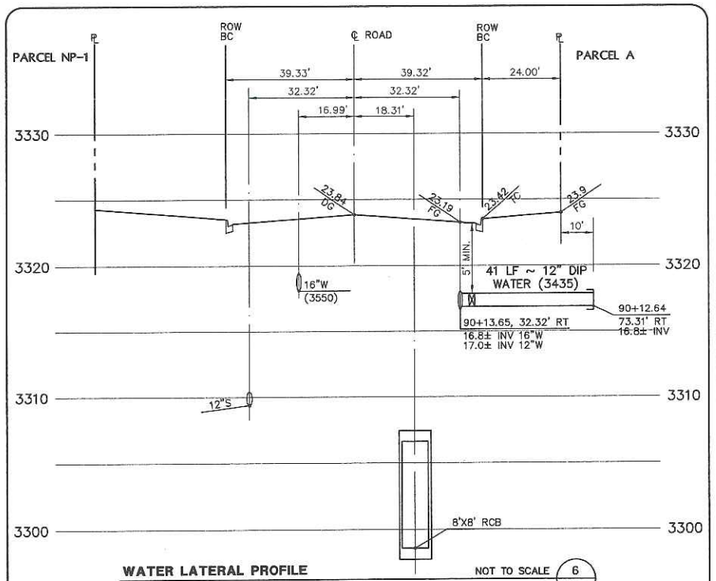
JOB NO. 62A.24.211

SHEET 22

22 OF 45 SHTS

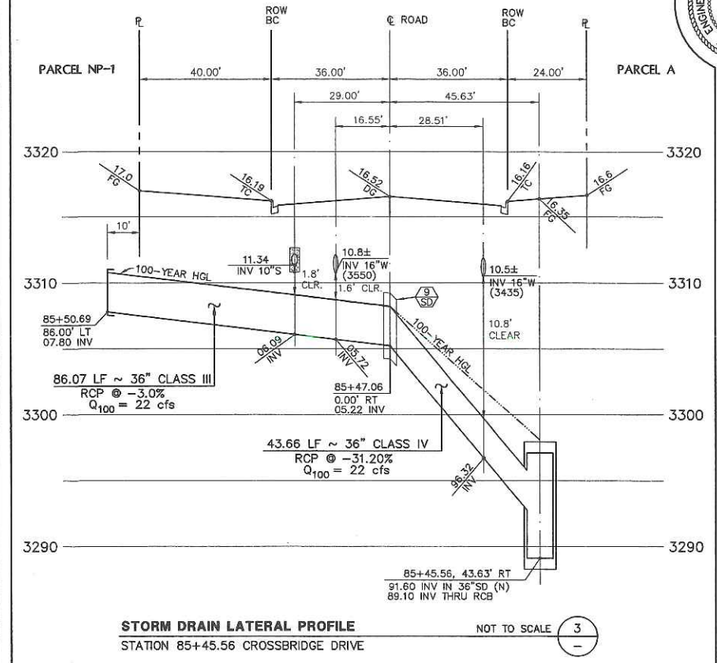


FIRE HYDRANT LATERAL PROFILE NOT TO SCALE (7)
STATION 86+50.04 CROSSBRIDGE DRIVE

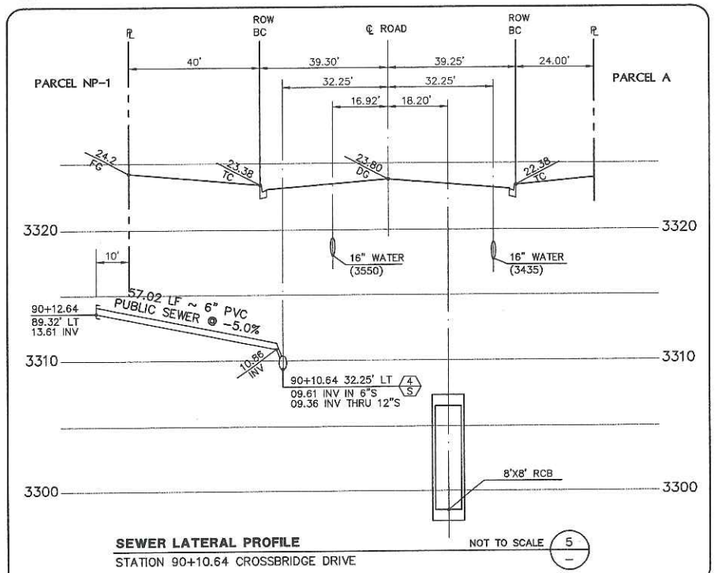


WATER LATERAL PROFILE NOT TO SCALE (6)
STATION 90+13.65 CROSSBRIDGE DRIVE

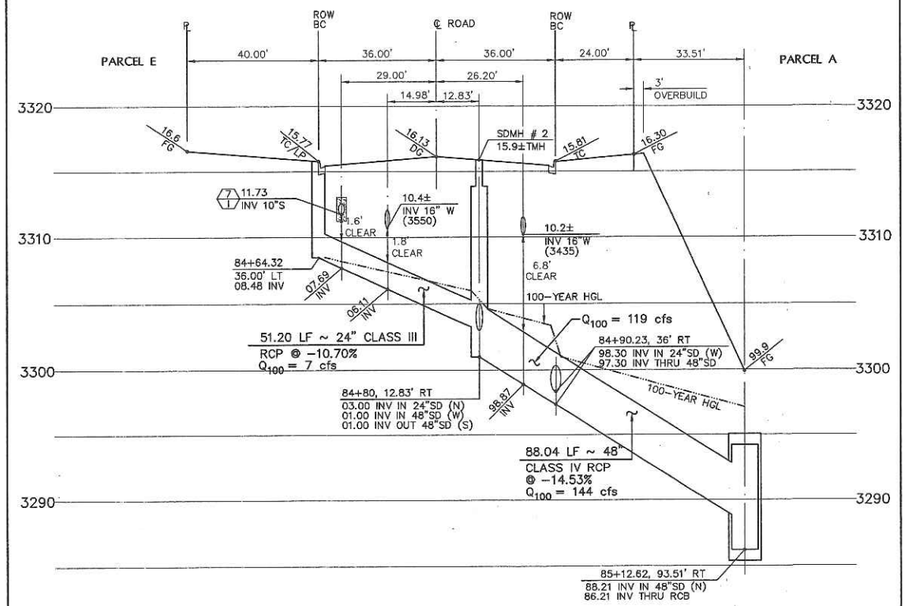
SEWER LATERAL PROFILE NOT TO SCALE (4)
STATION 89+65.30 CROSSBRIDGE DRIVE



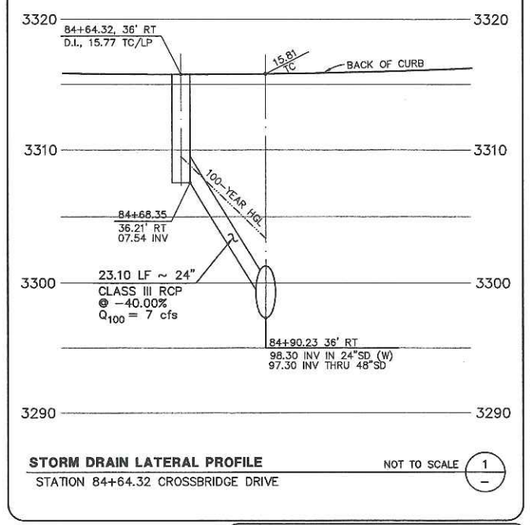
STORM DRAIN LATERAL PROFILE NOT TO SCALE (3)
STATION 85+45.56 CROSSBRIDGE DRIVE



SEWER LATERAL PROFILE NOT TO SCALE (5)
STATION 90+10.64 CROSSBRIDGE DRIVE



STORM DRAIN LATERAL PROFILE NOT TO SCALE (2)
STATION 84+80.00 CROSSBRIDGE DRIVE



STORM DRAIN LATERAL PROFILE NOT TO SCALE (1)
STATION 84+64.32 CROSSBRIDGE DRIVE

20 0 20 40
SCALE FEET

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT (PROJECT #106984) DATE

CLV DRAWING NO.

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
mlong
I:\V24\DWR-Phase1\dwg\Vimp1\DWR1-023.dwg

SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
LATERAL PROFILES II

JOB NO. 62A.24.211

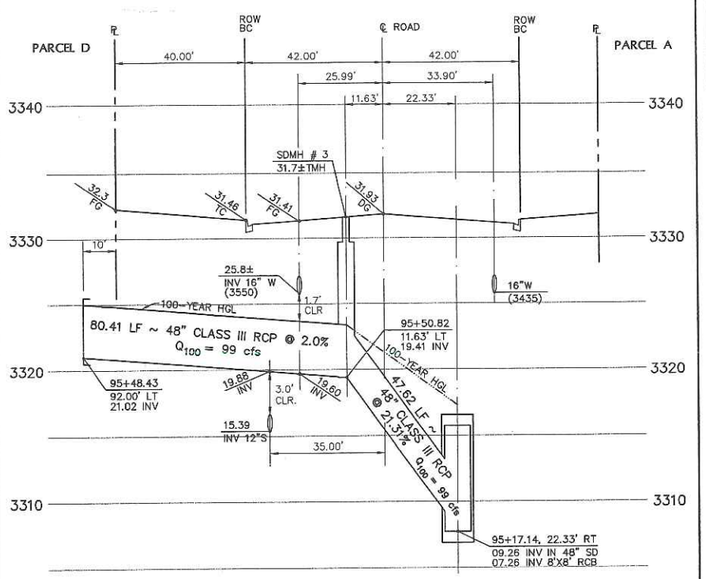
SHEET 23
23 OF 45 SHTS

DESIGN: GT
DRAWN: DN
CHECK: STS/BAH
ISSUE DATE:
ISSUE EDITOR: --07--05
PLOT DATE: 16:43:02

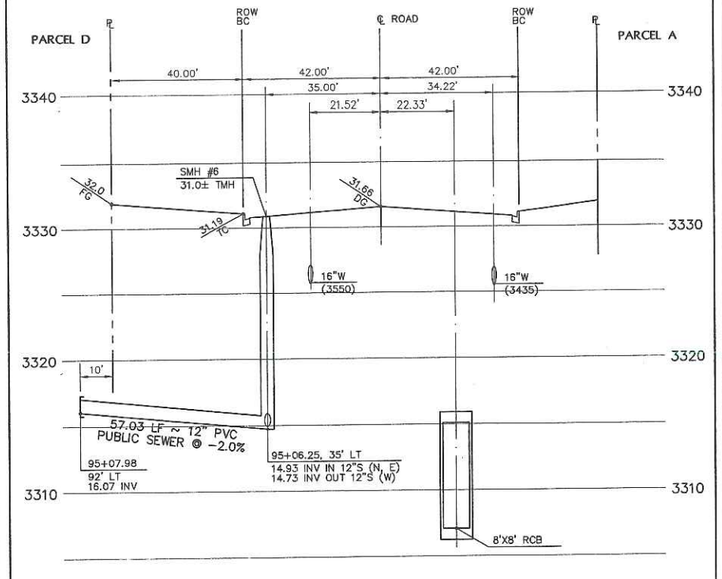
REV	DATE	DESCRIPTION
		90% SUBMITTAL - NOT FOR CONSTRUCTION

DATE | DATE AGEN. APP | DATE CNTY. APP

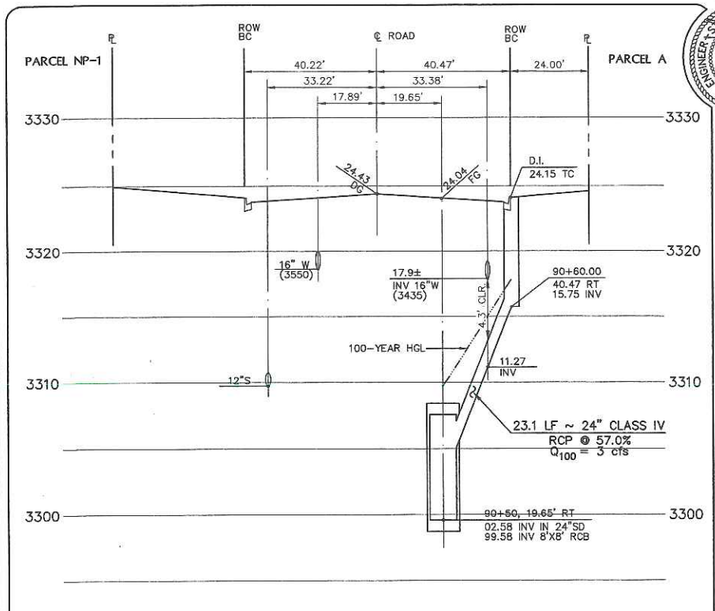
BEST AVAILABLE COPY



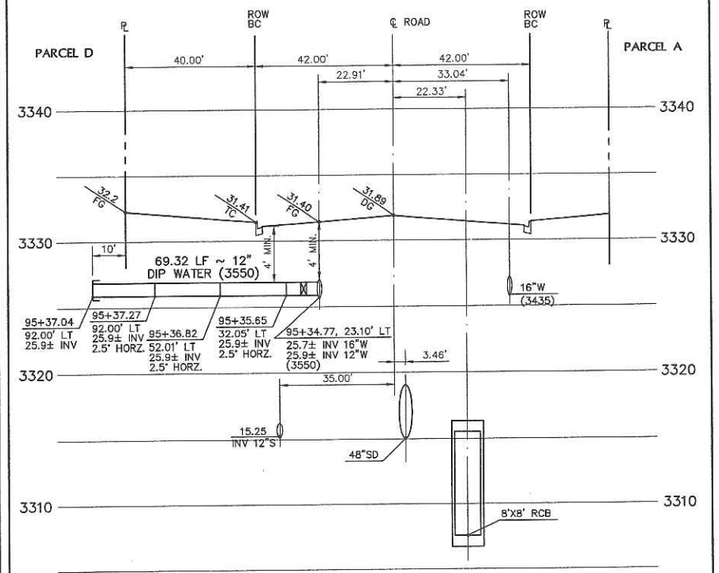
STORM DRAIN LATERAL PROFILE NOT TO SCALE (6)
STATION 95+50.82 CROSSBRIDGE DRIVE



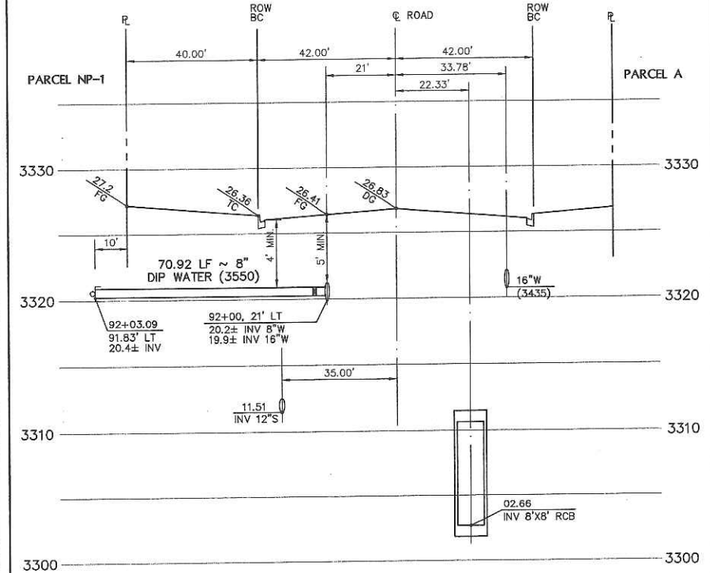
SEWER LATERAL PROFILE NOT TO SCALE (4)
STATION 95+06.25 CROSSBRIDGE DRIVE



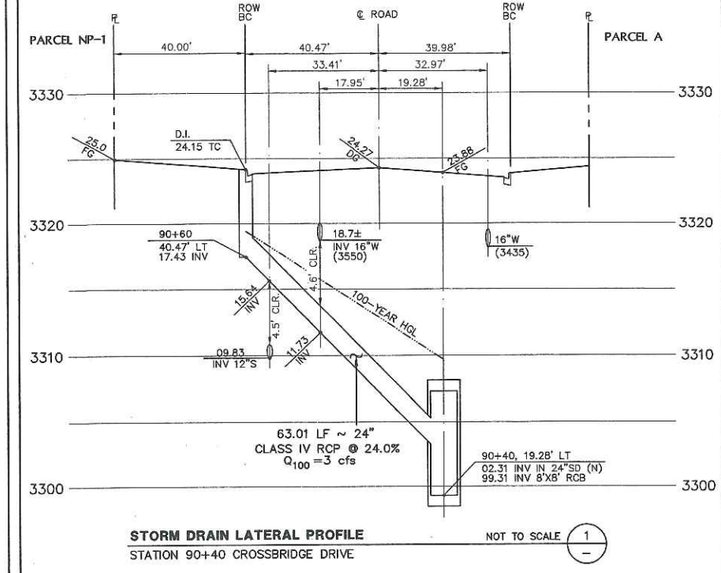
STORM DRAIN LATERAL PROFILE NOT TO SCALE (2)
STATION 90+50 CROSSBRIDGE DRIVE



WATER LATERAL PROFILE NOT TO SCALE (5)
STATION 95+36.50 CROSSBRIDGE DRIVE



WATER LATERAL PROFILE NOT TO SCALE (3)
STATION 92+00 CROSSBRIDGE DRIVE



STORM DRAIN LATERAL PROFILE NOT TO SCALE (1)
STATION 90+40 CROSSBRIDGE DRIVE

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT (PROJECT #106984) DATE

20 0 20 40
SCALE FEET

CLV DRAWING NO.

STATE OF NEVADA — PROFESSIONAL ENGINEER — CIVIL — No. 9889 — BRENT A. BUDGE — 6-30-22

DATE: 11/16/22

REV	DATE	DESCRIPTION	DATE	GEN. APP	DATE	GCW APP

DESIGN: GT
DRAWN: DN
CHECK: STS/BAH
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-07-05
PLOT TIME: 15:41:57

90% SUBMITTAL - NOT FOR CONSTRUCTION

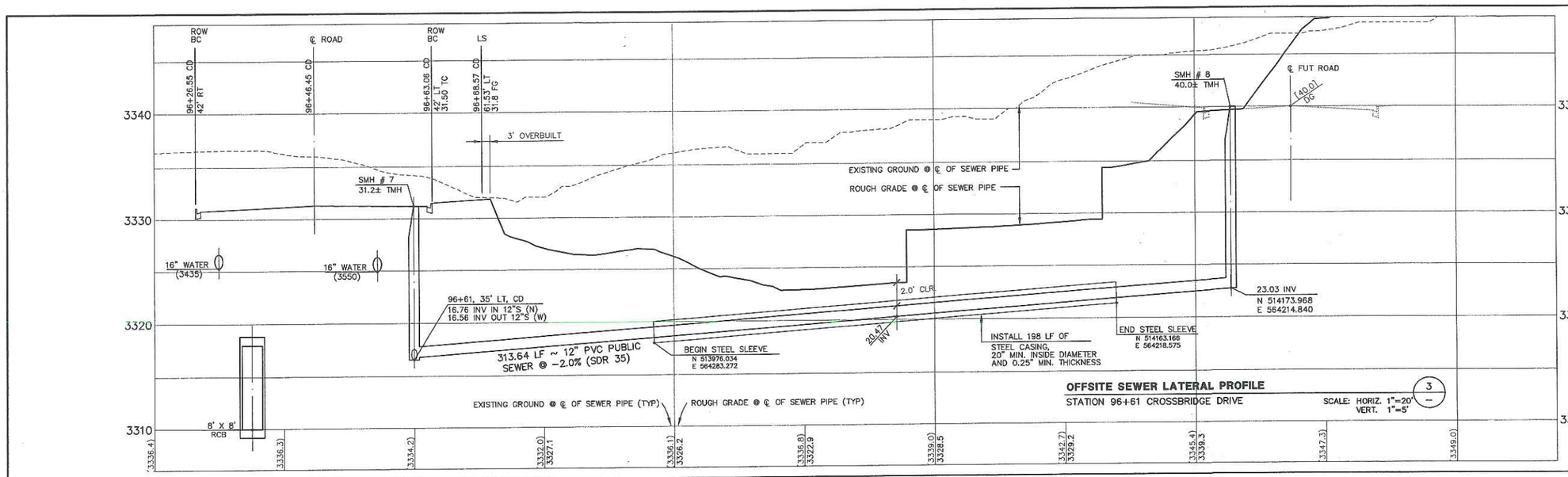
G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
mtong

L:\V2A\DMR-Phase1\dwg\mpa\DMR1c024.dwg

SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
LATERAL PROFILES III

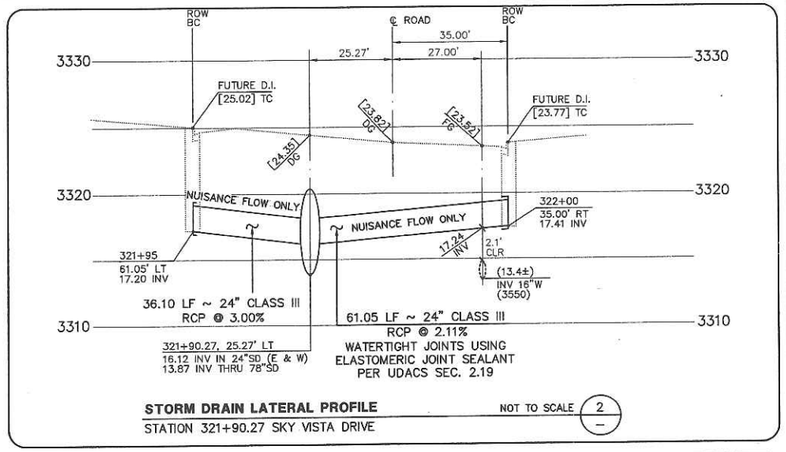
JOB NO. 62A.24.211

SHEET
24
24 OF 45 SHTS



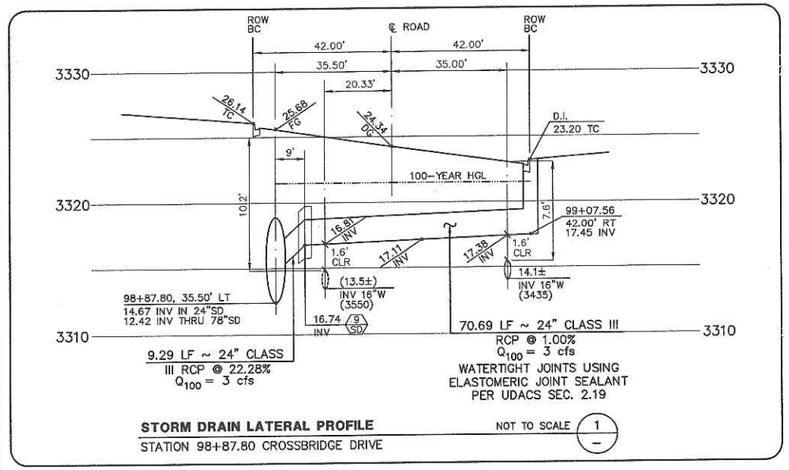
OFFSITE SEWER LATERAL PROFILE

STATION 96+61 CROSSBRIDGE DRIVE — SCALE: HORIZ. 1"=20' VERT. 1"=5' — 3 / —



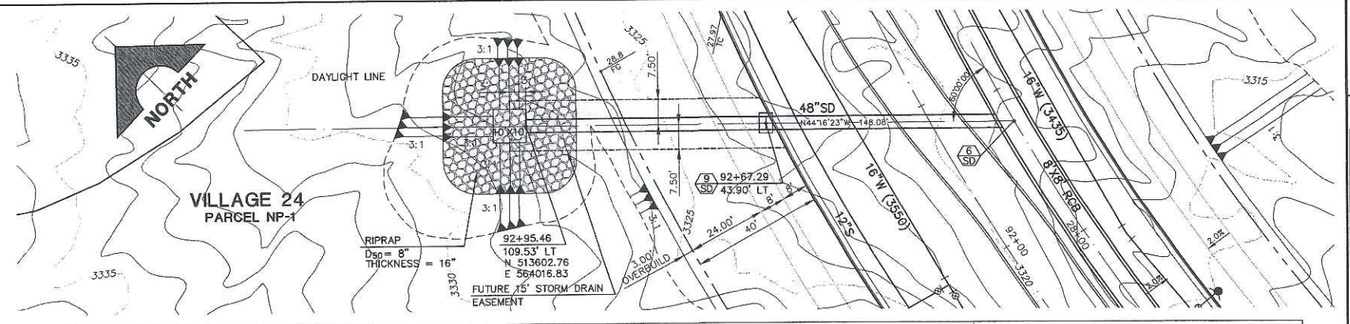
STORM DRAIN LATERAL PROFILE

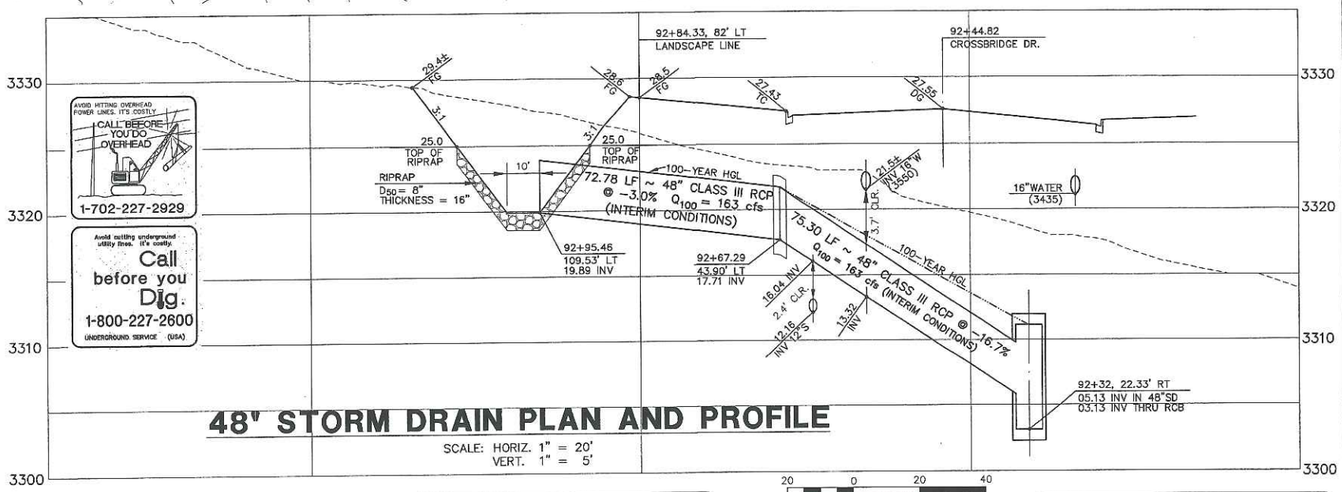
STATION 321+90.27 SKY VISTA DRIVE — NOT TO SCALE — 2 / —



STORM DRAIN LATERAL PROFILE

STATION 98+87.80 CROSSBRIDGE DRIVE — NOT TO SCALE — 1 / —





AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY. CALL BEFORE YOU DO OVERHEAD. 1-702-227-2929

Avoid cutting underground utility lines. It's costly. Call before you Dig. 1-800-227-2600 UNDERGROUND SERVICE (USA)

48" STORM DRAIN PLAN AND PROFILE

SCALE: HORIZ. 1" = 20' VERT. 1" = 5'

20 0 20 40 SCALE FEET

NOTE

THIS SET OF DRAWINGS IS BASED UPON NAVD 88 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT (PROJECT #106984) — DATE

CLV DRAWING NO. ____

ENGINEER - STATE OF NEVADA — BERT H. HUGHES — No. 10201 — PROFESSIONAL ENGINEER

NO.	DESCRIPTION	DATE	DRW. APP.	DATE	DGN. APP.	DATE	AGEN. APP.	DATE: 1 of 1

90% SUBMITTAL - NOT FOR CONSTRUCTION

DESIGN: DT
DRAWN: DT/DN
CHECK: STS/BAH
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-08-05
PLOT TIME: 11:54:29

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
mr/jmg
L:\V24\DWG\Phase1\dwg\Xmps\XMRT1025.dwg

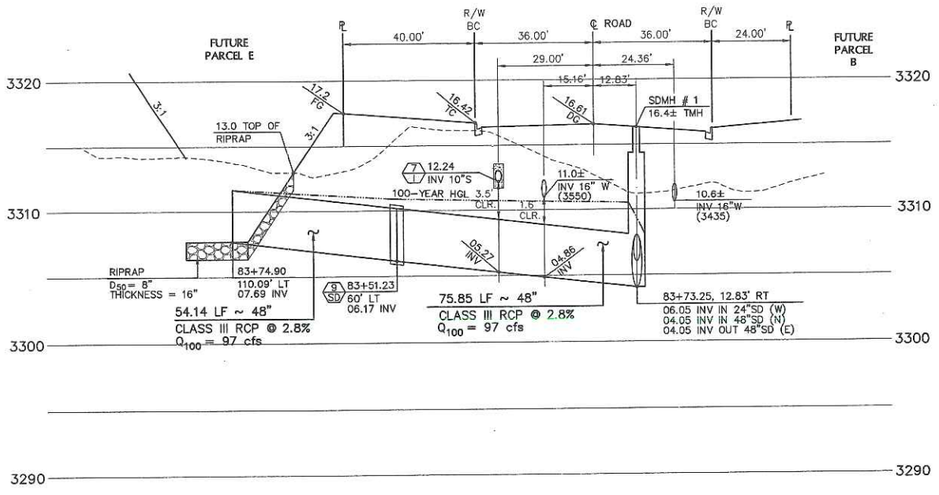
SUMMERLIN

VILLAGE 24 UNIT 1 IMPROVEMENTS

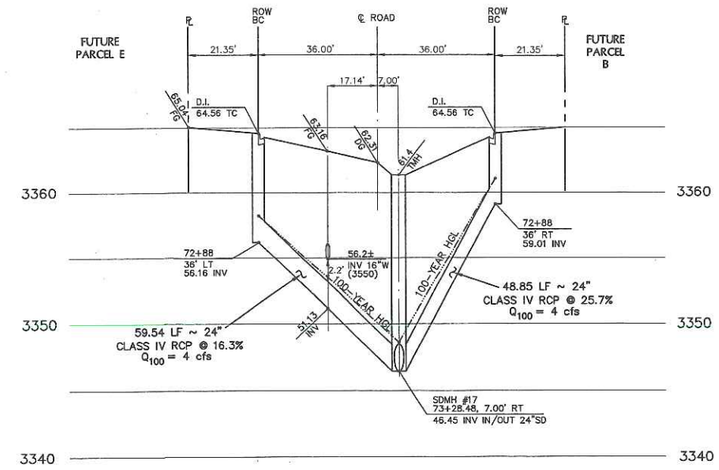
48" STORM DRAIN PLAN AND PROFILE, AND LATERAL PROFILES IV

JOB NO. 62A.24211

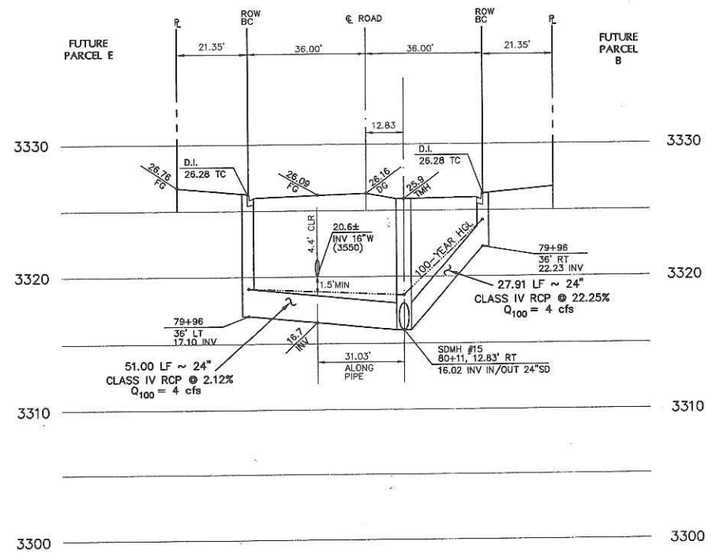
SHEET 25 — 25 OF 45 SHTS



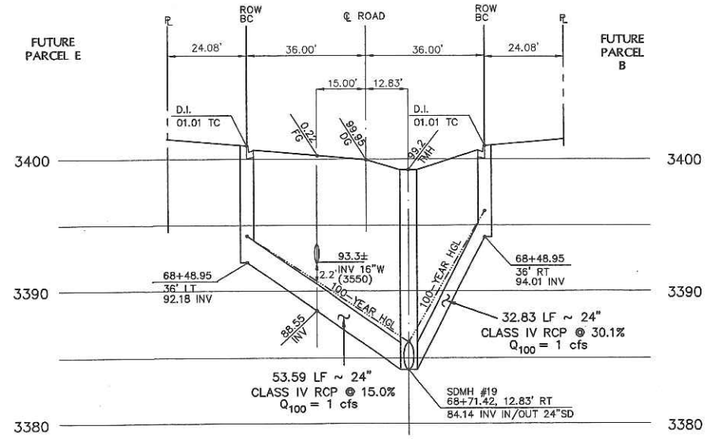
STORM DRAIN LATERAL PROFILE
STATION 83+73.25 CROSSBRIDGE DRIVE
NOT TO SCALE — 4



STORM DRAIN LATERAL PROFILE
STATION 73+28.48 CROSSBRIDGE DRIVE
2



STORM DRAIN LATERAL PROFILE
STATION 80+11.00 CROSSBRIDGE DRIVE
3



STORM DRAIN LATERAL PROFILE
STATION 68+71.42 CROSSBRIDGE DRIVE
1

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT (PROJECT #106984) DATE

20 0 20 40
SCALE FEET

CLV DRAWING NO.

BERT A. HUNSAKER
No. 17259
PROFESSIONAL ENGINEER
CIVIL
STATE OF NEVADA
DATE: 4/21/11

90% SUBMITTAL - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE ADSN	APP	DATE DCVP	APP

DESIGN: OT
DRAWN: DN
CHECK: STS/BAH
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 02-27-06
PLOT TIME: 10:43:47

G. C. WALLACE, INC.
Engineers/Planners/Surveyors
6670 SOUTH TENAYA WAY, SUITE 200
LAS VEGAS, NEVADA 89113
(702) 804-8200 FAX (702) 804-8299
gwallace

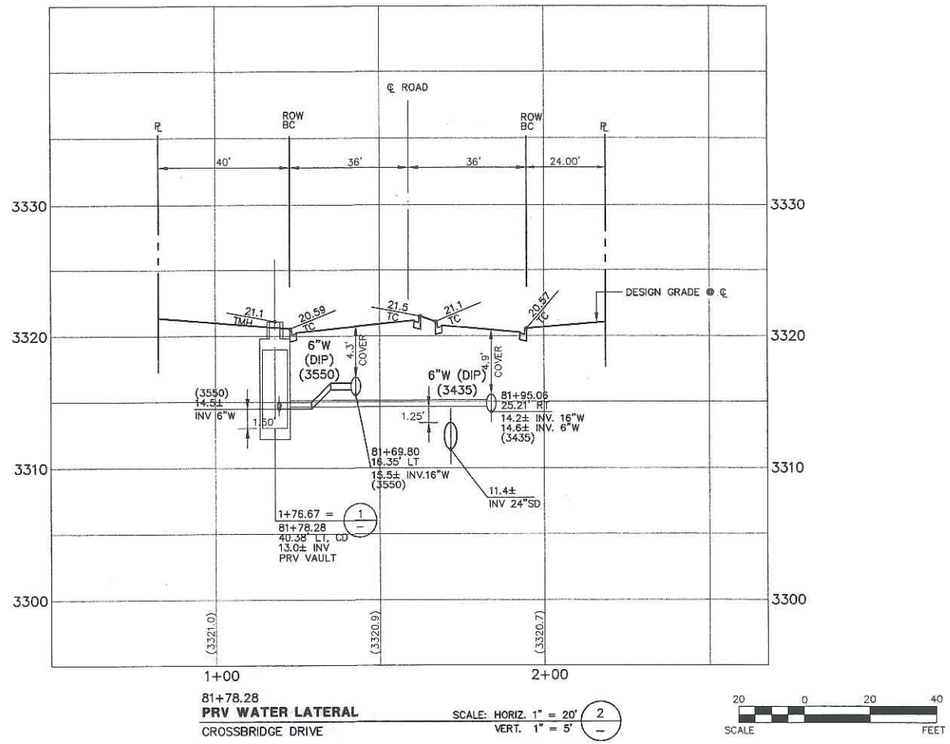
I:\V24\UMR-Phase1\dwg\Vmps\UMR1-c05.dwg

SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
LATERAL PROFILES V

JOB NO. 62A.24.21

SHEET
26
26 OF 45 SHTS

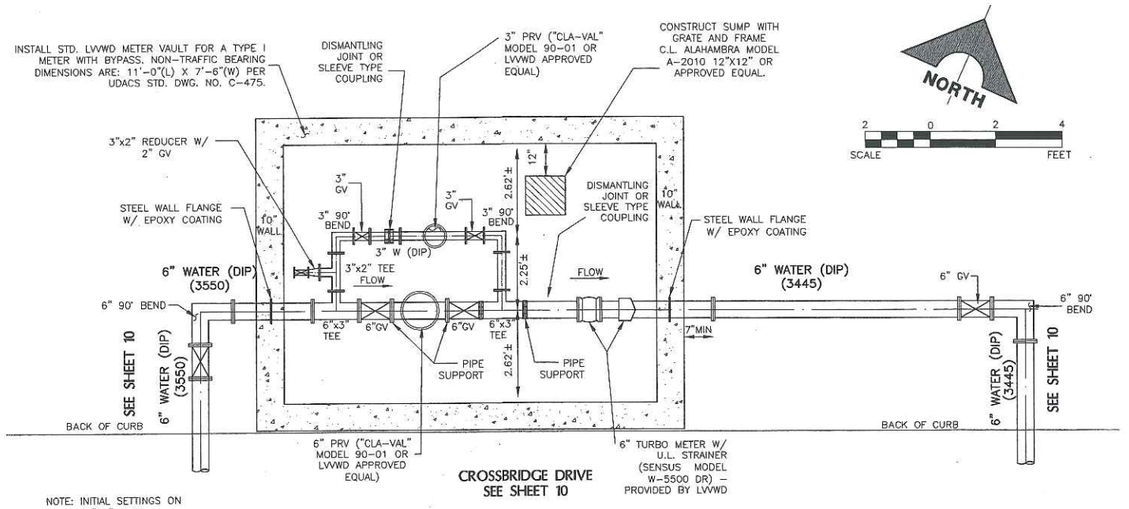
I:\24258.dir\05WP.lnk



81+78.28
PRV WATER LATERAL
CROSSBRIDGE DRIVE

SCALE: HORIZ. 1" = 20' (2)
VERT. 1" = 5'

20 0 20 40
SCALE FEET



PRV PIPING PLAN
STATION 81+78.28 CROSSBRIDGE DRIVE

SCALE: 1" = 2' (1)

APPROVAL:

LAS VEGAS VALLEY WATER DISTRICT (PROJECT #----) DATE

CLV DRAWING NO.

DESIGN: DT
DRAWN: DT
CHECK: STS/BAH
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-07-05
PLOT TIME: 15:41:19

REV	DATE	DESCRIPTION	DATE ASBL APP	DATE EOW APP	DATE
					1/9/06

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BIRTCHER
No. 9326
STATE OF NEVADA
REGISTERED PROFESSIONAL ENGINEER

G. C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299

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SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
PRV DETAILS

JOB NO. 62A.24211

SHEET
27
27 OF 45 SHTS

MATCH LINE - SEE SHEET 29

NORTH

SKY VISTA DRIVE

STREET "H"

STREET "I"

CHARLESTON BOULEVARD

NDOT ROW 150.00'

NDOT ROW

DRAINAGE ENTRY TO REDROCK DETENTION BASIN

RETAINING WALL

RETAINING WALL

GABIONS

GABIONS

DAYLIGHT LINE

DAYLIGHT LINE

EX. NPC CONDUIT

EX.12"W

12"W (3435)

12"W

15"S

30"SD

24"SD

21.54 INV

SHEET INDEX MAP

PARCEL I
PARCEL J
VILLAGE 24
VILLAGE 23A
SHT 34
SHT 30
SHT 29
SHT 28
SHT VISTA DRIVE
CROSSBRIDGE DR.
PARCEL H
PARCEL E
NP-1
PARCEL A
PARCEL B
PARCEL F
SHT 33
SHT 32
SHT 31
CHARLESTON BLVD.
NORTH N.T.S.

SCALE 40 0 40 80 FEET

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AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY. CALL BEFORE YOU DO OVERHEAD 1-702-227-2929

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

BENCHMARK

CLV BM NO.	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

CLV DRAWING NO. _____

ENGINEER - STATE OF NEVADA - PETER J. HUBLEY - No. 9858 - PROFESSIONAL ENGINEER - CIVIL - DATE 11/10/08

DESCRIPTION	REV / DATE
90% SUBMITTAL - NOT FOR CONSTRUCTION	

DESIGN:
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ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-07-06
PLOT TIME: 16:41:12

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Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD., LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2600 • FAX: (702) 804-2299
mfong

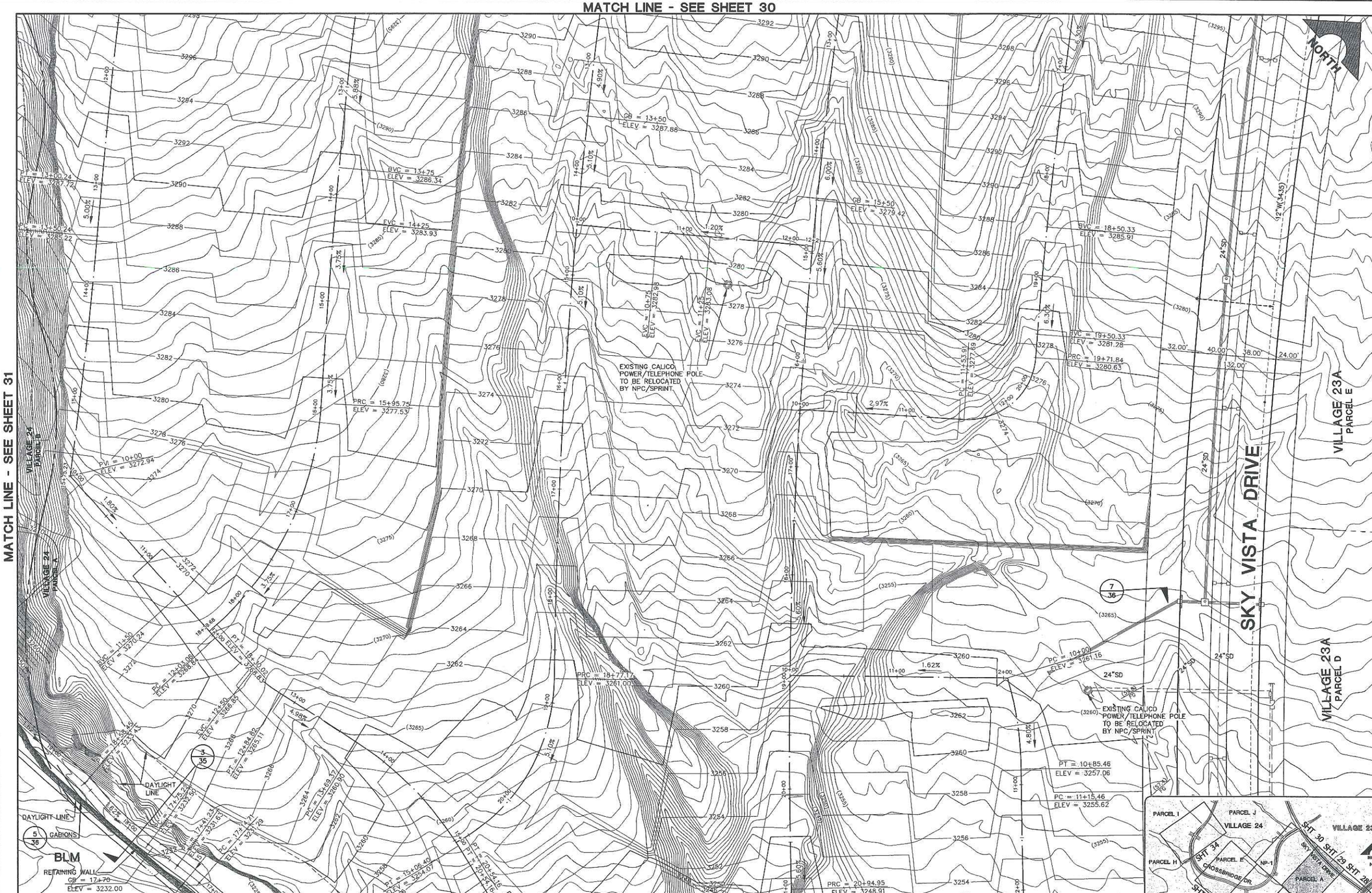
L:\v24\DMR-Phase1\dwg\Imps\DMR1-0228.dwg

SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
MASS GRADING PLAN I

JOB NO. 62A.24.211

SHEET 28
28 OF 45 SHTS

MATCH LINE - SEE SHEET 30



MATCH LINE - SEE SHEET 28

40 0 40 80
SCALE FEET

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UNDERGROUND SERVICE (USA)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY
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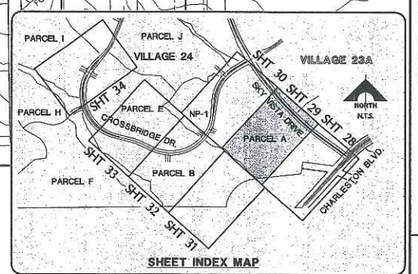
1-702-227-2929

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

BENCHMARK

CLV BM NO.	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)



SHEET INDEX MAP

CLV DRAWING NO.

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
mfeng

DESIGN:
DRAWN:
CHECK:
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-07-05
PLOT TIME: 16:40:33

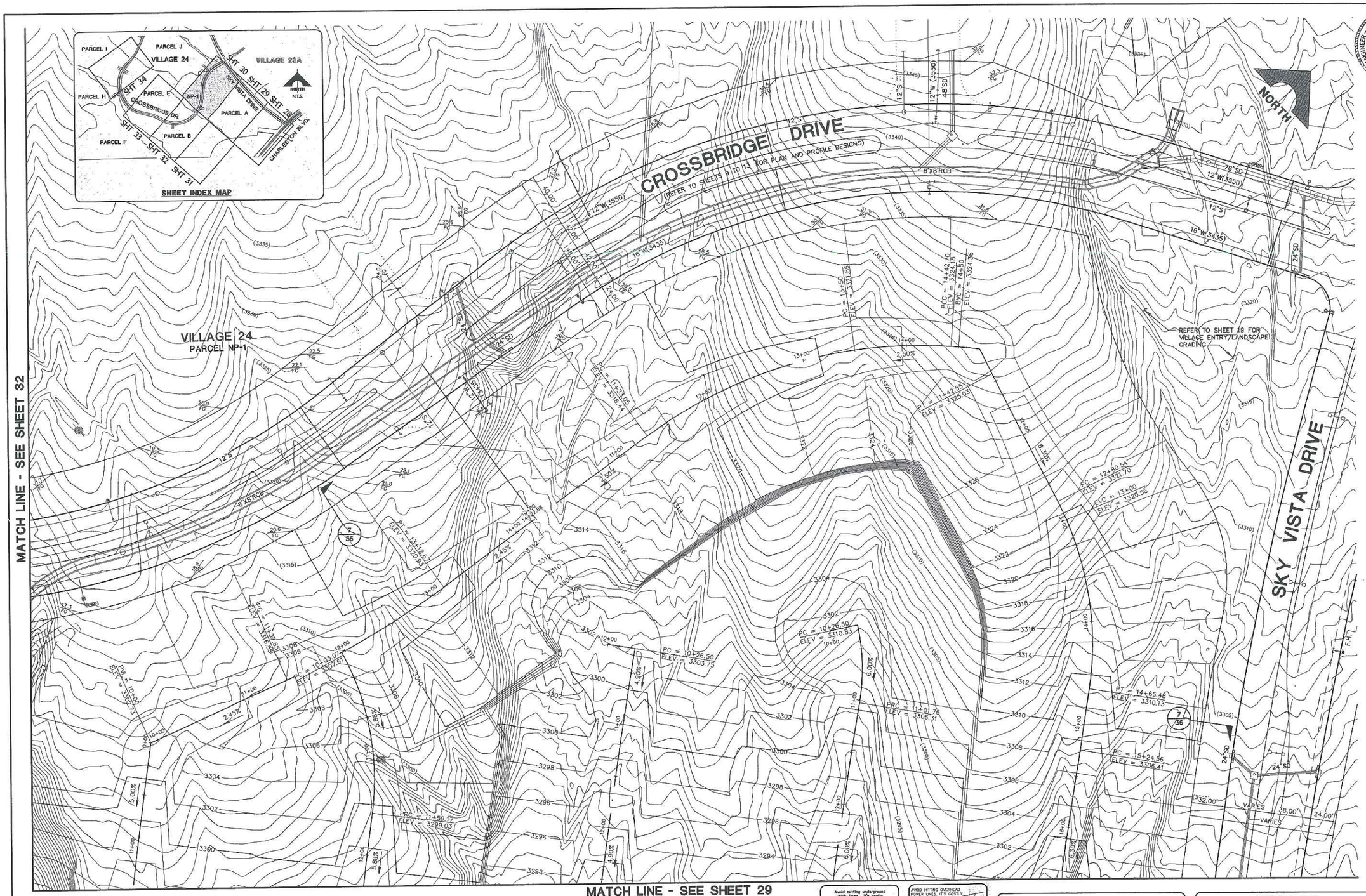
REV	DATE	DESCRIPTION	DATE	AGEN. APP	DATE	GCW. APP

90% SUBMITTAL - NOT FOR CONSTRUCTION

SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
MASS GRADING PLAN II

JOB NO. 62A.24.211

SHEET
29
29 OF 45 SHTS



40 0 40 80
SCALE FEET

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1-800-227-2600
UNDERGROUND SERVICE (USA)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

BENCHMARK

CLV BM NO.	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

CLV DRAWING NO. _____

PROFESSIONAL ENGINEER - STATE OF NEVADA
BERT H. HUGHES
CIVIL
No. 10259
DATE: 1/10/06

REV	DATE	DESCRIPTION	DATE	AGEN. APP	DATE	GCW. APP

DESIGN:
DRAWN:
CHECK:
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-07-05
PLOT TIME: 16:39:54

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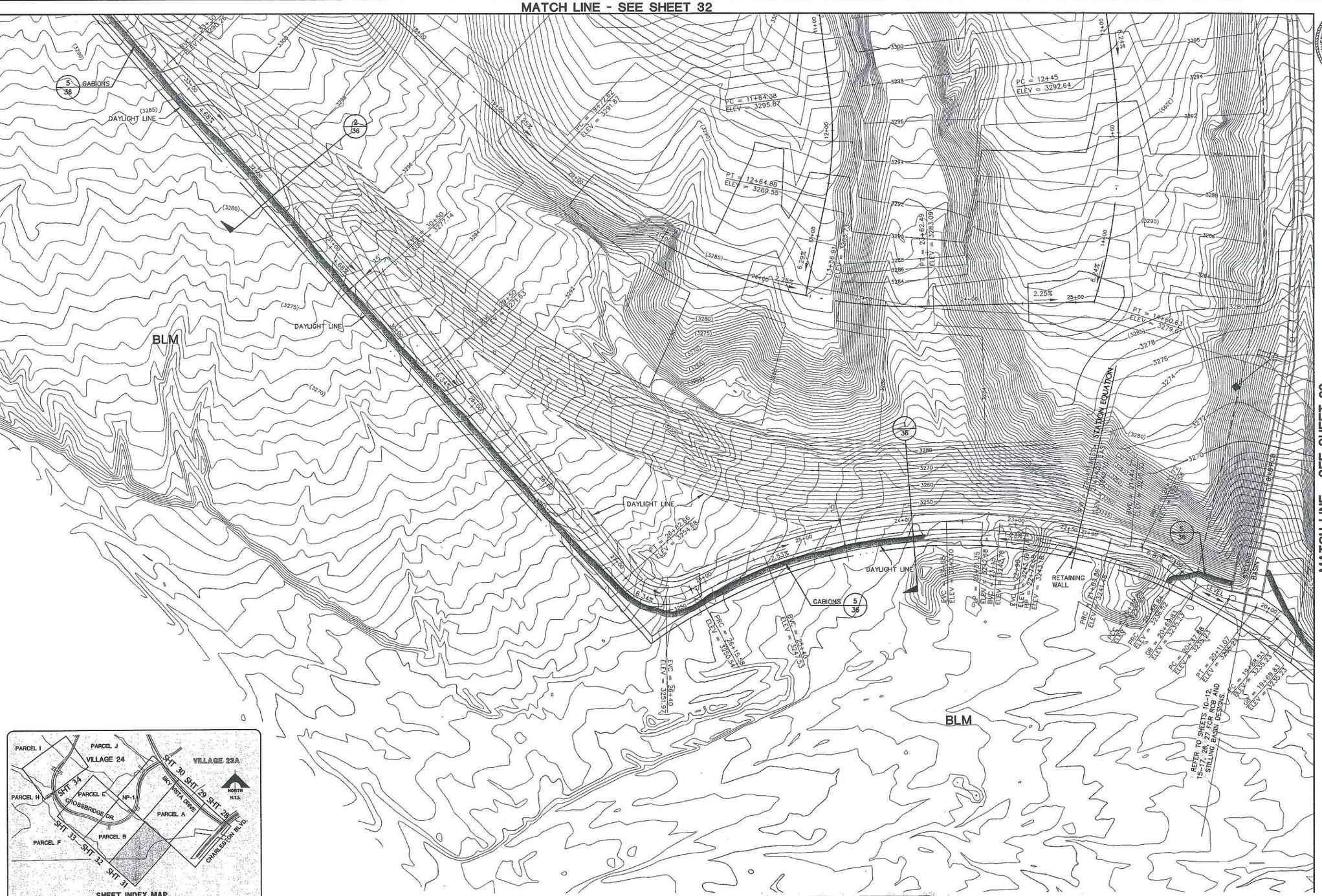
SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
MASS GRADING PLAN III

JOB NO. 62A.24.211

SHEET 30
30 OF 45 SHTS

MATCH LINE - SEE SHEET 32

MATCH LINE - SEE SHEET 29



NORTH

SCALE 40 0 40 80 FEET

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UNDERGROUND SERVICE (USA)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

BENCHMARK

CLV BM NO.	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

CLV DRAWING NO. _____

PROFESSIONAL ENGINEER STATE OF NEVADA No. 10029 BRIAN J. HUGHES CIVIL
DATE: 1/16/06

REV. DATE	DESCRIPTION	DATE	AGEN.	APP.	DATE	DRW.	APP.
PLOT TIME: 15:39:24	90% SUBMITTAL - NOT FOR CONSTRUCTION						
PLOT DATE: 01-07-06							
ISSUE DATE:							
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DESIGN:							

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Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299

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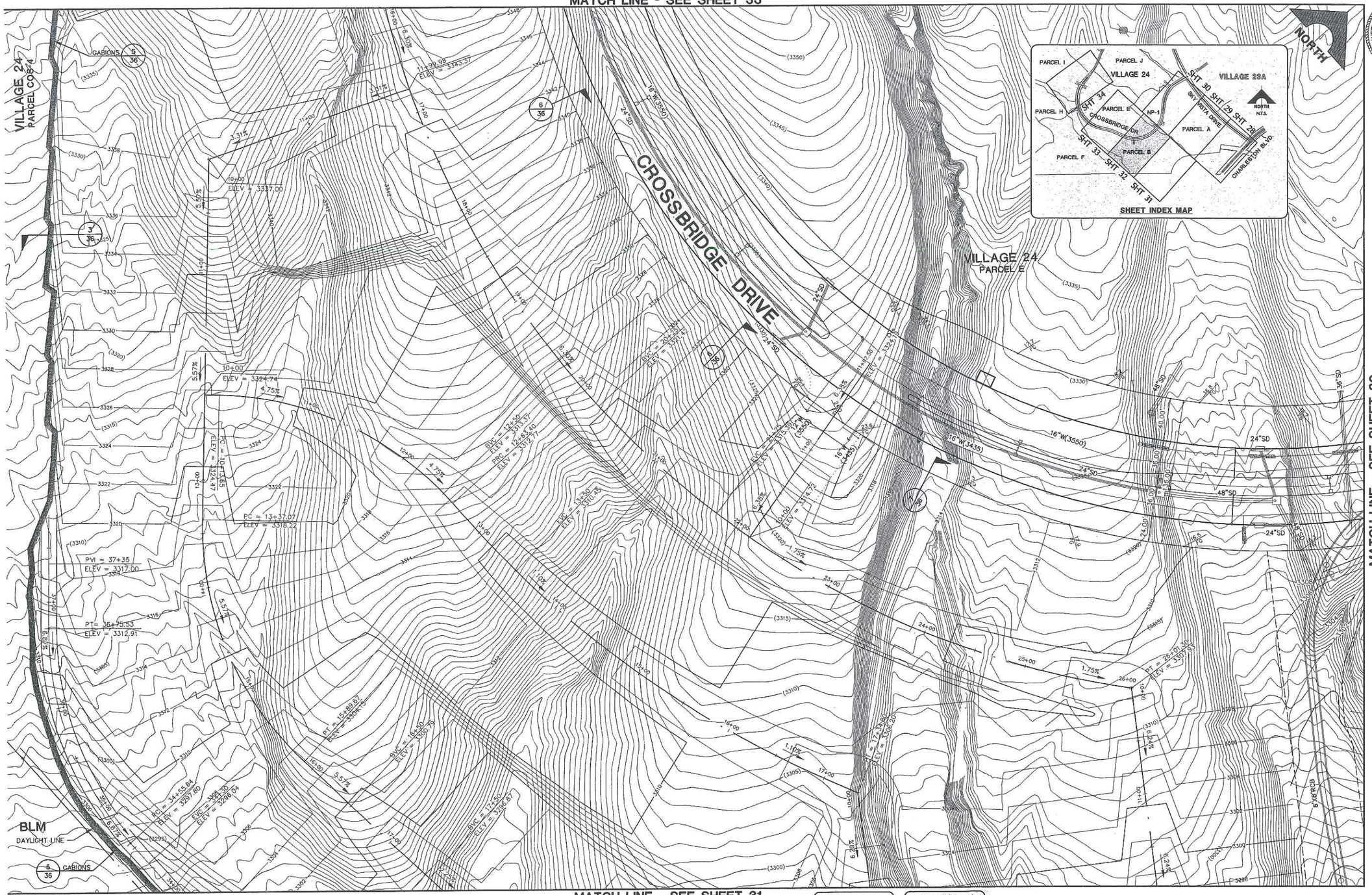
SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
MASS GRADING PLAN IV

JOB NO. 62A.24.211

SHEET 31
31 OF 45 SHTS

s24.dgn.sun.032913.dgn

MATCH LINE - SEE SHEET 33



MATCH LINE - SEE SHEET 31

MATCH LINE - SEE SHEET 30

SCALE 40 0 40 80 FEET

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AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY! CALL BEFORE YOU DO OVERHEAD 1-702-227-2929

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

BENCHMARK

CLV BM NO.	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

CLV DRAWING NO. _____

STATE OF NEVADA — PROFESSIONAL ENGINEER — No. 009889 — BEN HUNTLEY — CIVIL

REV	DATE	DESCRIPTION	DATE AGEN. APP.	DATE GOVT. APP.	DATE: 1/9

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PLOT DATE: 12-07-05
PLOT TIME: 15:36:45
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SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
MASS GRADING PLAN V

JOB NO. 62A-24-211

SHEET 32
32 OF 45 SHTS

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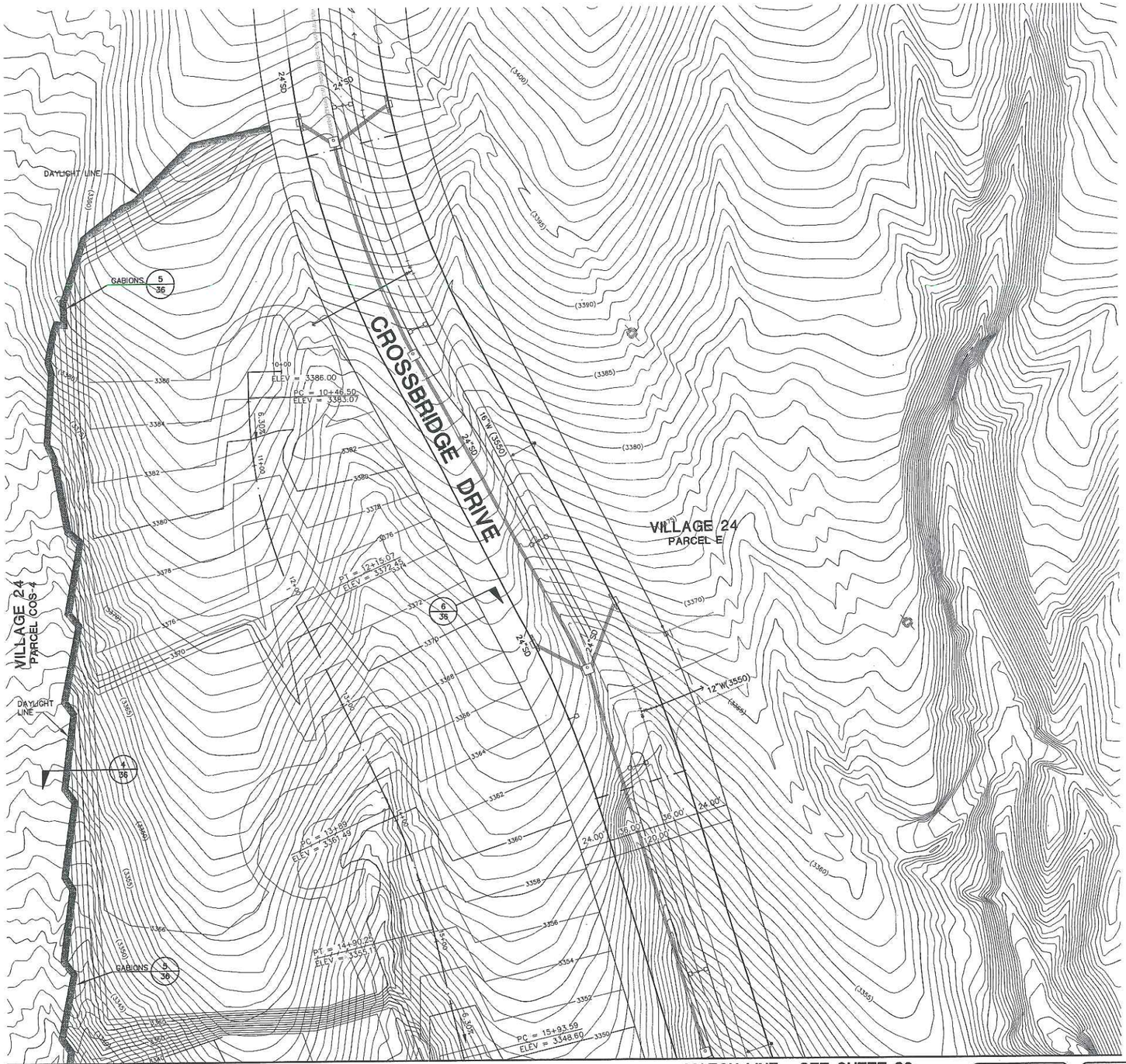
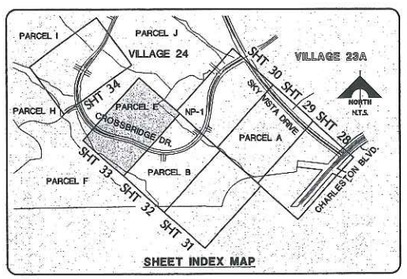


MATCH LINE - SEE SHEET 32

40 0 40 80
SCALE FEET



SHEET INDEX MAP

Avoid cutting underground utility lines. It's costly.
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UNDERGROUND SERVICE (USA)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY
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1-702-227-2929

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

BENCHMARK

CLV BM NO.	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

CLV DRAWING NO.

STATE OF NEVADA
BERT HUGHES
No. 10259
PROFESSIONAL ENGINEER
CIVIL
DATE: 1/16/06

REV	DATE	DESCRIPTION	DATE	AGEN. APP	DATE	GCW. APP

DESIGN:
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ISSUE EDITOR:
PLOT DATE: 12-07-05
PLOT TIME: 16:38:13

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SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
MASS GRADING PLAN VI

JOB NO. 62A.24.211

SHEET
33
33 OF 45 SHTS

VILLAGE 24
PARCEL I

VILLAGE 24
PARCEL J

NORTH

RIPRAP
D50=6"
DEPTH=12"

N 514246.7540
E 562039.9720
FG 3455.6

N 514413.4725
E 562226.2646
FG 3457.6
(MATCH EXISTING GRADE)

CHANNEL N48°10'25"E 250.00'

1.0%

TOP OF BERM

DAYLIGHT LINE

GRADE BREAK

FLOW LINE

CHANNEL N23°58'57"E 765.00'

FUTURE CROSSBRIDGE DRIVE

N 513547.7963
E 561729.0330
FG 3447.3
(MATCH EXISTING GRADE)

N 513529.5228
E 561720.9039
FG 3447.3
(MATCH EXISTING GRADE)

CONTRACTOR TO MINIMIZE DISTURBANCE IN USA WATER DRAINAGE CHANNEL

VILLAGE 24
COS - 3

SCALE
40 0 40 80
FEET

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UNDERGROUND SERVICE (USA)

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PARCEL I
PARCEL J
VILLAGE 24
VILLAGE 23A
PARCEL H
PARCEL E
NP-1
PARCEL A
PARCEL B
PARCEL F
CROSSBRIDGE DR.
SKY MESA DRIVE
CHARLESTON BLVD.
SHT 34
SHT 30
SHT 29
SHT 28
SHT 33
SHT 32
SHT 31
NORTH
N.T.S.

SHEET INDEX MAP

EX GROUND
VARIES
15'
15'
10'
VARIES
3:1 (TYP)
1% PER PLAN
2% (TYP)
MINIMUM
2.6'
95% COMPACTED FILL
BERM IS NOT REQUIRED IF CUT SLOPE IS EQUAL TO OR EXCEEDS 5' IN VERTICAL HEIGHT.
RIPRAP
D50=6"
DEPTH=12"

CHANNEL DETAIL
NO SCALE
1

EXISTING GROUND
1' WIDE AND 2' DEEP TRENCH FILLED W/ RIPRAP D50=6"
5'

BERM DETAIL
NO SCALE
2

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

BENCHMARK

CLV BM NO.	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
0358 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

CLV DRAWING NO. _____

ENGINEER: STATE OF NEVADA — BRENT L. WALLACE — No. 9019 — PROFESSIONAL ENGINEER

DATE: 11-07-12

REV	DATE	DESCRIPTION	DATE AGEN. APP	DATE ROW APP

DESIGN:
DRAWN:
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ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-08-05
PLOT TIME: 11:44:37

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mfong

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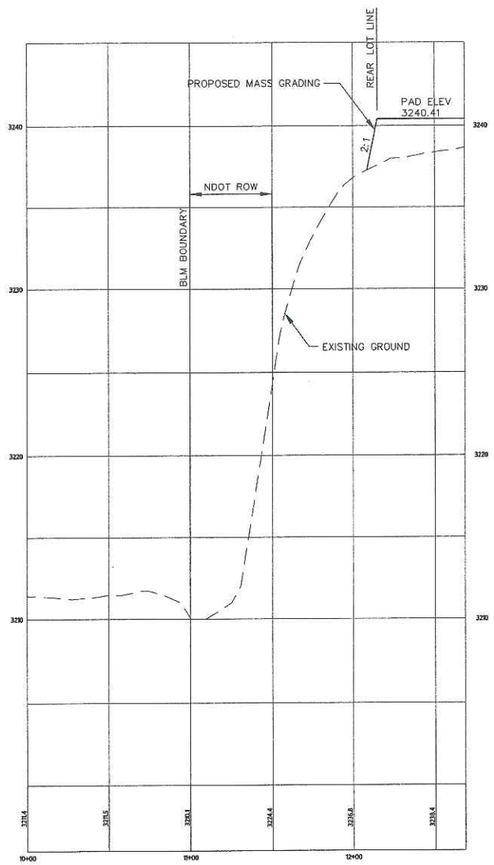
SUMMERLIN
VILLAGE 24 UNIT I IMPROVEMENTS
DIVERSION BERM PLAN

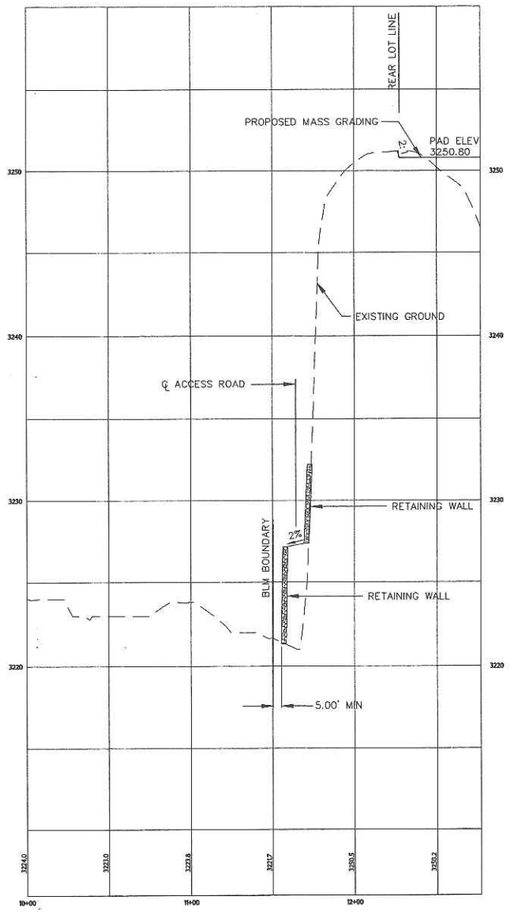
JOB NO. 62A.24.211

SHEET
34
34 OF 45 SHTS



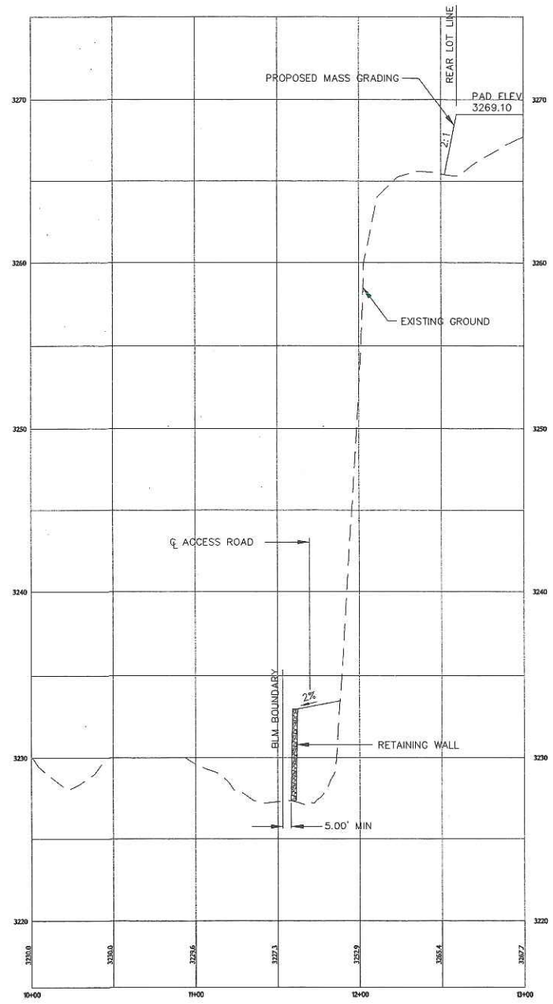
EDGE CONDITION SECTION 1/–

SCALE : HORIZ 1" = 40'
VERT 1" = 4'



EDGE CONDITION SECTION 2/–

SCALE : HORIZ 1" = 40'
VERT 1" = 4'



EDGE CONDITION SECTION 3/–

SCALE : HORIZ 1" = 40'
VERT 1" = 4'

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UNDERGROUND SERVICE (USA)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY
CALL BEFORE YOU DO OVERHEAD
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BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

BENCHMARK

CLV BM NO.	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

CLV DRAWING NO. _____

STATE OF NEVADA
BERT HUGHES
CIVIL
No. 10259
PROFESSIONAL ENGINEER
DATE: 1/14/09

REV	DATE	DESCRIPTION	DATE	AGEN. APP	DATE	GCW. APP

DESIGN:
DRAWN:
CHECK:
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-07-05
PLOT TIME: 16:37:08

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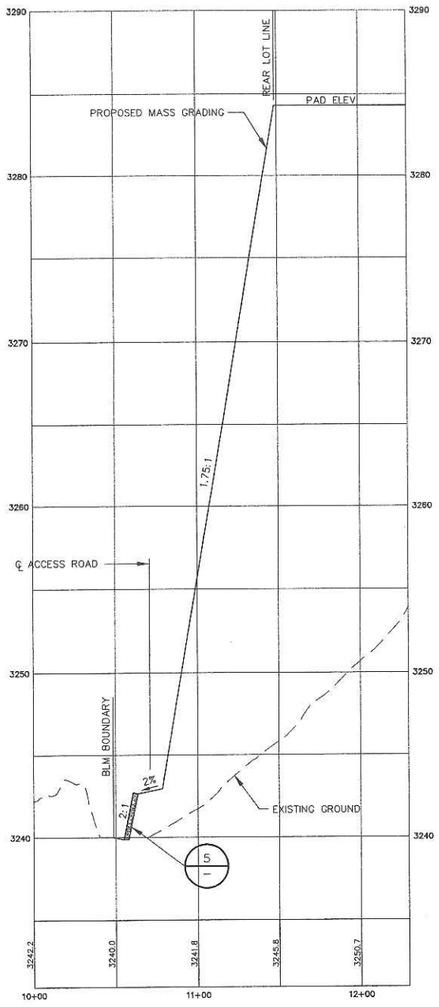
SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
EDGE CONDITION SECTIONS I

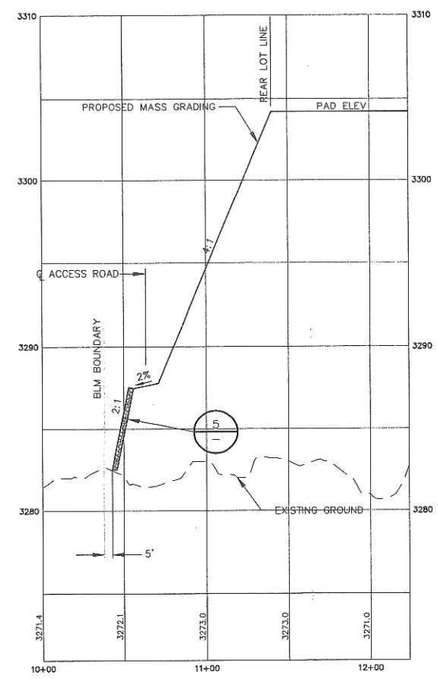
JOB NO. 62A.24.211

SHEET 35
35 OF 45 SHTS



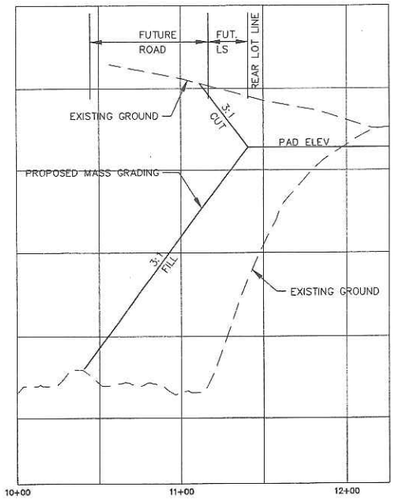
EDGE CONDITION SECTION (1)

SCALE : HORIZ 1" = 40'
VERT 1" = 4'



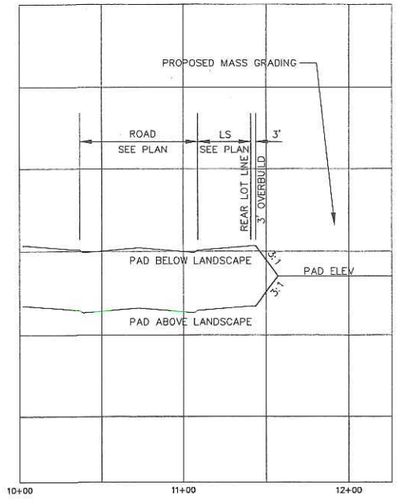
EDGE CONDITION SECTION (2)

SCALE : HORIZ 1" = 40'
VERT 1" = 4'



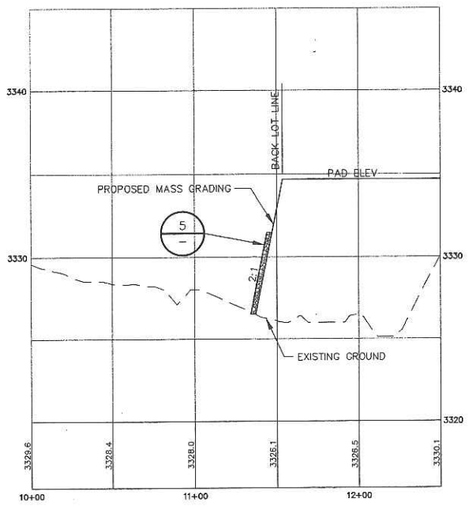
EDGE CONDITION SECTION (6)

SCALE : HORIZ 1" = 40'
VERT 1" = 4'



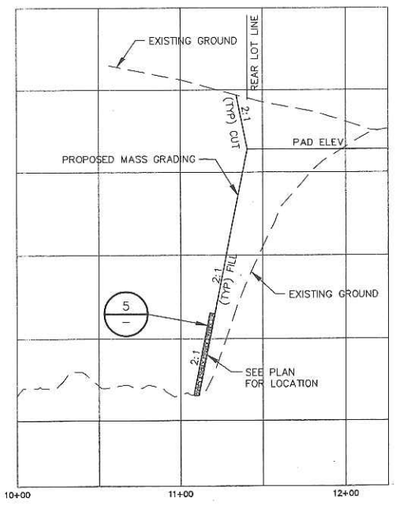
EDGE CONDITION SECTION (7)

SCALE : HORIZ 1" = 40'
VERT 1" = 4'



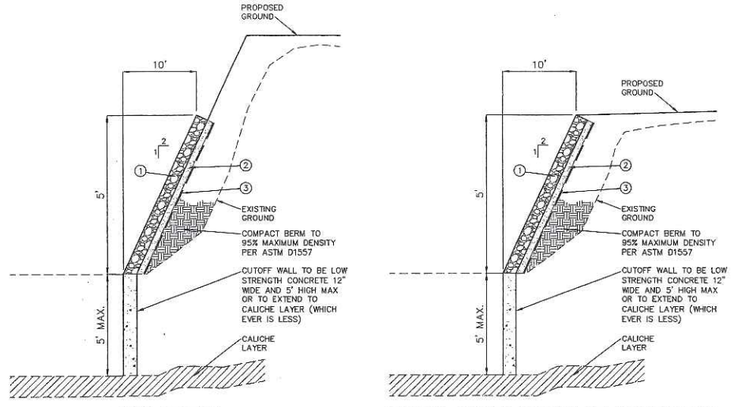
EDGE CONDITION SECTION (3)

SCALE : HORIZ 1" = 40'
VERT 1" = 4'



TYPICAL EDGE CONDITION SECTION (4)

SCALE : HORIZ 1" = 40'
VERT 1" = 4'



TYPICAL GABION SECTION

TYPICAL GABION SECTION AT ACCESS ROAD

CONSTRUCTION NOTES

1. INSTALL 18" THICK GABION BLANKET LINING WITH 3' x 3' CELLS.
2. INSTALL 6" TYPE II COMPACTED TO 90% OF MODIFIED PROCTOR, OVER 6" NATIVE MATERIAL SCARIFIED & COMPACTED TO 90% MODIFIED PROCTOR.
3. INSTALL FILTER FABRIC MACTEX MX 275 LINER OR APPROVED EQUAL

TYPICAL GABION SECTION (5)

NOT TO SCALE

Avoid cutting underground utility lines. It's costly.
Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE (USA)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

BENCHMARK

CLV BM NO.	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
0368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

CLV DRAWING NO. _____

ENGINEER - STATE OF NEVADA - BRIAN L. LEE - No. 10368 - PROFESSIONAL ENGINEER - CIVIL

DATE: 1 | 1 | 04

REV.	DATE	DESCRIPTION	DATE AGEN. APP	DATE ECNV. APP

DESIGN:
DRAWN:
CHECK:
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-07-05
PLOT TIME: 16:37:04

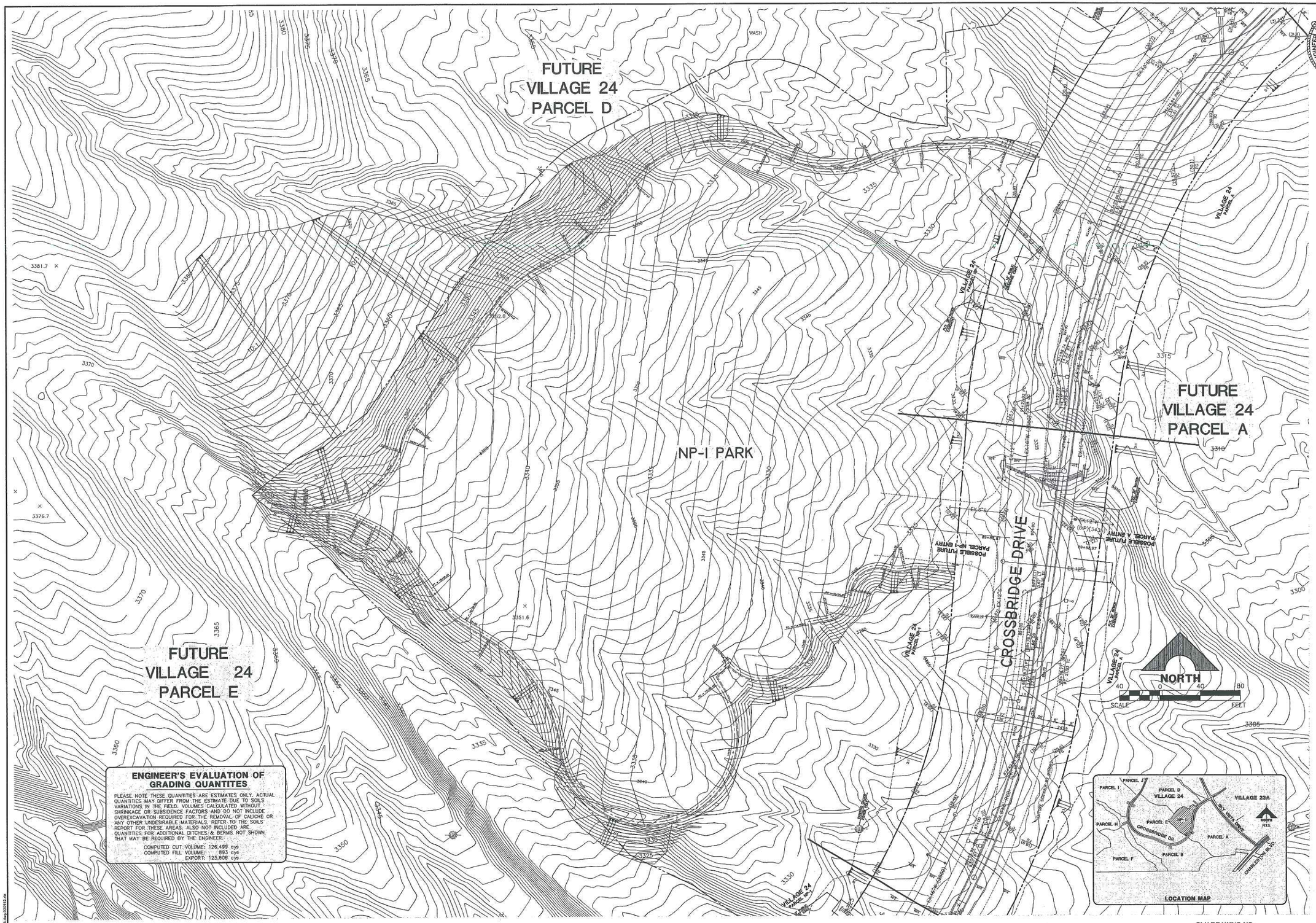
907 SUBMITTAL – NOT FOR CONSTRUCTION

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
mfong
I:\V24\DWR-Phase1\dwg\Vmss\DWR1c036.dwg

SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
EDGE CONDITION SECTIONS II

JOB NO. 62A.24.211

SHEET 36
36 OF 45 SHTS



ENGINEER'S EVALUATION OF GRADING QUANTITES

PLEASE NOTE THESE QUANTITIES ARE ESTIMATES ONLY. ACTUAL QUANTITIES MAY DIFFER FROM THE ESTIMATE DUE TO SOILS VARIATIONS IN THE FIELD. VOLUMES CALCULATED WITHOUT SHRINKAGE OR SUBSIDENCE FACTORS AND DO NOT INCLUDE OVEREXCAVATION REQUIRED FOR THE REMOVAL OF CALICHE OR ANY OTHER UNDESIRABLE MATERIALS. REFER TO THE SOILS REPORT FOR THESE AREAS. ALSO NOT INCLUDED ARE QUANTITIES FOR ADDITIONAL DITCHES & BERMS NOT SHOWN THAT MAY BE REQUIRED BY THE ENGINEER.

COMPUTED CUT VOLUME: 126,499 cys
COMPUTED FILL VOLUME: 893 cys
EXPORT: 125,606 cys

CLV DRAWING NO.

DESIGN: BE
DRAWN: BB
CHECK: STS/BAH
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-08-05
PLOT TIME: 11:43:16

90% SUBMITTAL - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE	AGEN. APP	DATE	GCW APP

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299

SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
BORROW SITE

JOB NO. 62A.24.211

SHEET
37
37 OF 45 SHTS

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.
CALL BEFORE YOU DO OVERHEAD
1-702-227-2929

Avoid cutting underground utility lines. It's costly.
Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE (USA)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. 0368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

40 0 40 80
SCALE FEET

NORTH

79+50 MATCHLINE - SEE SHEET 39

92+00 MATCHLINE - SEE BELOW LEFT

MATCHLINE STATION 92+00 SEE ABOVE RIGHT

VILLAGE 24
PARCEL E

VILLAGE 24
PARCEL NP-1

VILLAGE 24
PARCEL B (PHASE I)

VILLAGE 24
PARCEL D

VILLAGE 24
PARCEL NP-1

VILLAGE 24
PARCEL A

VILLAGE 23A

VILLAGE 23A

CROSSBRIDGE DRIVE

CROSSBRIDGE DR.

DESERT MOON ROAD

SKY VISTA DR.

SHEET INDEX MAP

80+50 END TYPE 4 LANE LINE
80+00
81+00
81+21 BEGIN TYPE 4 LANE LINE
81+21 BEGIN STORAGE LANE LINE
82+00
82+24 END STORAGE LANE LINE
83+00
84+00
85+00
86+00
87+00
88+00
89+41 END TYPE 4 LANE LINE
89+41 END STORAGE LANE LINE END TYPE 4 LANE LINE
88+36 BEGIN STORAGE LANE LINE
90+00
90+38 BEGIN STORAGE LANE LINE
90+38 BEGIN TYPE 4 LANE LINE
91+00
91+47 END STORAGE LANE LINE
91+24.07
92+00
94+84 END STORAGE LANE LINE END TYPE 4 LANE LINE
94+00
95+00
96+00
97+00
97+28.71 PT = 97+28.71
97+73 END DROP LANE LINE BEGIN STORAGE LANE LINE
98+00
99+00
99+20
99+23 END TYPE 4 LANE LINE
99+38 BEGIN TYPE 4 LANE LINE
99+41 END STORAGE LANE LINE END TYPE 4 LANE LINE
99+52.25 CROSSBRIDGE DRIVE & DESERT MOON ROAD
321+09.72 SKY VISTA DR.
100+56 24" WIDE WHITE STOP BAR PMF TYPE 1
101+00
101+59 END TRANSITION LINE END STORAGE LANE LINE
101+58 BEGIN TRANSISTION LANE
102+00
103+00
103+58 END TRANSITION LANE MATCH EXISTING
104+00
320+00
320+40 END TYPE 4 LANE LINE END 6" WHITE BIKE LANE LINE MATCH EXISTING
320+44 END TYPE 4 LANE LINE END STORAGE LANE LINE END 6" WHITE BIKE LANE LINE MATCH EXISTING
321+00
322+00
93+24 BEGIN DROP LANE LINE BEGIN TYPE 4 LANE LINE
93+80 BEGIN STORAGE LANE LINE

MEDIAN NOSE MARKINGS 248 USD
TYPE 4 LANE LINE 244A USD
TYPE 4 LANE LINE 244A USD
TYPE 4 LANE LINE 244A USD
TYPE 4 LANE LINE 244A USD
TYPE 4 LANE LINE 244A USD
PAVEMENT LEGENDS (TYP.) 246 USD
PAVEMENT LEGENDS (TYP.) 246 USD
PAVEMENT LEGENDS (TYP.) 246 USD
PAVEMENT LEGENDS (TYP.) 246 USD
WHITE TRANSITION STRIPES 245 USD
24" WIDE WHITE CHEVRONS 245 USD
24" WIDE YELLOW CHEVRONS 245 USD
YELLOW TRANSITION STRIPES 245 USD
24" WIDE WHITE STOP BAR PMF TYPE 1 254A USD
CROSSWALK MARKINGS (TYP.) 254A USD
6" WHITE BIKE LANE LINE 244.5 USD
MEDIAN NOSE MARKINGS 248 USD
MEDIAN NOSE MARKINGS 248 USD
MEDIAN NOSE MARKINGS 248 USD
STORAGE LANE LINE 246 USD
STORAGE LANE LINE 246 USD

W16-1 30"X30"
W16-1(SP) 24"X18" PAVEMENT ENDS
R2-1 24"X30" SPEED LIMIT 30
R3-7L 30"X30" LEFT LANE MUST TURN LEFT
R3-7R 30"X30" RIGHT LANE MUST TURN RIGHT
R1-1 36"X36" STOP
R1-1 EX. STOP
R3-17 EX. BIKE LANE
R2-1 EX. SPEED LIMIT 35
R-1 36"X36"

ROAD CLOSED
BARRICADE & R11-2 (TYP) 48"X30"
REMOVE BARRICADE & R11-2 (TYP)
(2) METRO 9" SIGNS CROSSBRIDGE DRIVE
(2) METRO 9" SIGNS DESERT MOON RD.
(2) METRO 9" SIGNS SKY VISTA DRIVE

RIGHT LANE MUST TURN RIGHT EX. R3-7R
EX. R3-7R

FOR EXISTING IMPROVEMENTS, SEE: THE PASEOS - VILLAGE 23A UNIT 1 IMPROVEMENTS By G. C. WALLACE, INC. JOB # 62023.221 CITY OF LAS VEGAS #107-V3574-1

FOR EXISTING IMPROVEMENTS, SEE: VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS By G. C. WALLACE, INC. JOB # 62A.24.220 CITY OF LAS VEGAS # 107-V4292

PRIOR TO INITIATING THE INSTALLATION OF ANY STRIPING, REFER TO THE CITY OF LAS VEGAS TRAFFIC NOTES AND STRIPING GENERAL NOTES.

SEE SHEET 38 FOR TYPICAL SIGN INSTALLATION DETAIL, CITY OF LAS VEGAS TRAFFIC NOTES, AND STRIPING GENERAL NOTES.

CROSSBRIDGE DRIVE
SCALE: 1"=40'

CLV DRAWING NO. _____

STATE OF NEVADA
JAMES R. MOTSINGER
No. 9889
CIVIL
PROFESSIONAL ENGINEER
DATE: 1/19/06

DESIGN:
DRAWN:
CHECK:
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-14-05
PLOT TIME: 13:14:59
GPETERSON

90% SUBMITTAL - NOT FOR CONSTRUCTION

REV.	DATE	DESCRIPTION

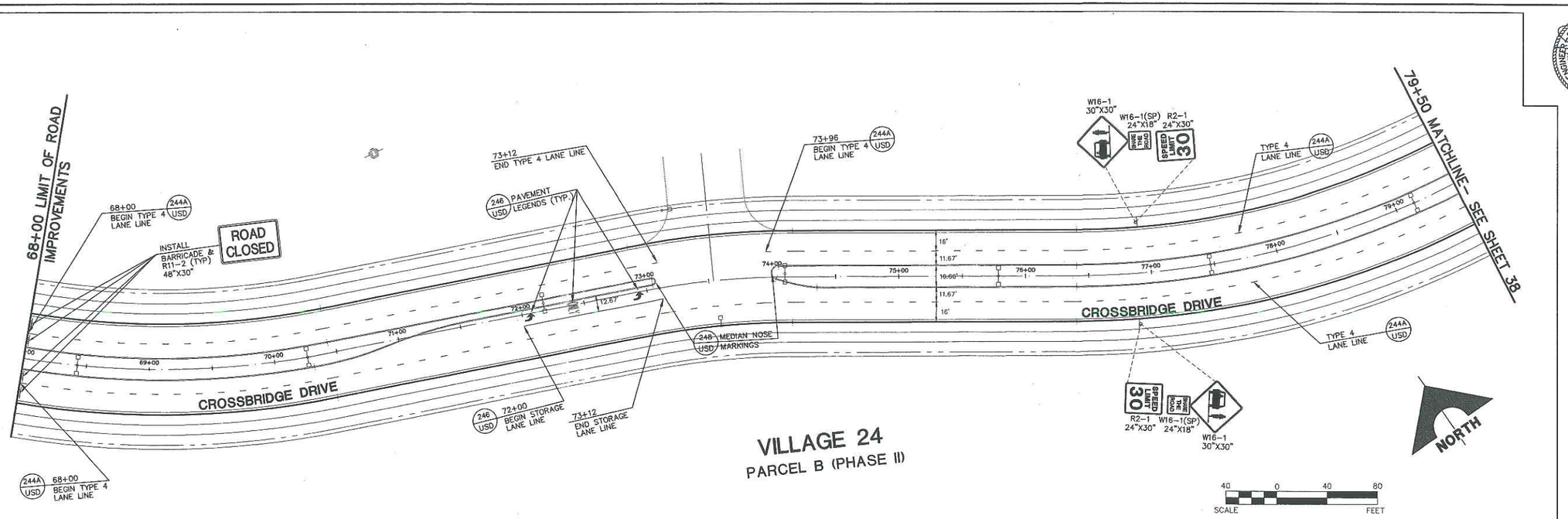
DATE: LAGEN. APP'D DATE: ICOW. APP'D

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD, LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
I:\v24\DMR-Phase1\dwg\DMR1c038.dwg

SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
STRIPING AND SIGNAGE PLAN I

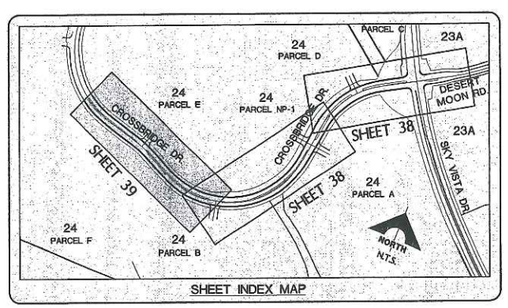
SHEET 38
38 OF 45 SHTS

JOB NO. 62A.24.211

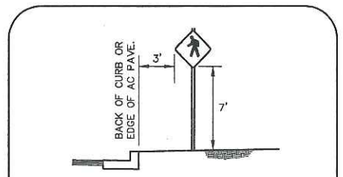


CROSSBRIDGE DRIVE

SCALE: 1"=40'



SHEET INDEX MAP



TYPICAL SIGN INSTALLATION

SCALE: N.T.S.

GENERAL NOTES

1. SEE THIS SHEET FOR SIGN INSTALLATION DETAIL.
2. SIGNAGE SHALL BE INSTALLED PRIOR TO ANY PORTION OF THE ROADWAY BEING OPEN TO PUBLIC TRAFFIC.
3. ALL LANE DELINEATION'S TO BE MEASURED AT RIGHT ANGLES AND TO BACK OF CURB TO CONFORM TO CURB ANGLE POINT AND TRANSITIONS.
4. SEE THIS SHEET FOR TRAFFIC NOTES.
5. ALL COLD POLYMER FILM STOP BARS, CROSSWALKS, PAVEMENT ARROWS, AND PAVEMENT MARKINGS SHALL BE 3M-N440 OR APPROVED EQUIVALENT.
6. ALL CONSTRUCTION AND MATERIALS FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH THE "UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" CLARK COUNTY AREA, NEVADA, THIRD EDITION, UNLESS OTHERWISE SPECIFIED BY NOTE ON THE DRAWINGS AND/OR SPECIFICATIONS.
7. ALL DIMENSIONS ARE TAKEN TO BACK OF CURB AND CENTER OF LANE LINES UNLESS OTHERWISE NOTED.
8. SIDEWALK RAMP TO BE INSTALLED BY OTHERS AT DEPRESSED CURB LOCATIONS SHOWN ON PLAN AND PROFILE DRAWINGS.
9. CONTRACTOR TO OBTAIN FINAL STREET NAMES PRIOR TO PROCEEDING WITH STREET NAME SIGNS.

CITY OF LAS VEGAS TRAFFIC NOTES

1. ALL CONSTRUCTION SIGNING, BARRICADING AND TRAFFIC DELINEATION SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC DEVICES", LATEST EDITION.
2. THE STREET SIGN CONTRACTOR SHALL OBTAIN STREET NAMES AND BLOCK NUMBERING FROM THE PLANNING DEPARTMENT PRIOR TO CONSTRUCTION.
3. BEFORE ANY WORK IS STARTED IN THE RIGHT-OF-WAY, THE CONTRACTOR SHALL INSTALL ALL ADVANCED WARNING SIGNS FOR THE CONSTRUCTION ZONES. THE CONTRACTOR SHALL INSTALL TEMPORARY STOP SIGNS AT ALL NEW STREET ENCROACHMENTS INTO EXISTING CITY STREETS WHERE WARRANTED IMMEDIATELY AFTER FIRST GRADING WORK IS ACCOMPLISHED, AND SHALL MAINTAIN SAID SIGNS UNTIL PERMANENT SIGNS ARE INSTALLED.
4. WHEN A DESIGNATED "SAFE ROUTE TO SCHOOL" IS ENCROACHED UPON BY A CONSTRUCTION WORK ZONE AND PUBLIC WORKS STAFF IDENTIFIES A NEED FOR STUDENTS TO BE ASSISTED IN THE SAFE CROSSING THROUGH THAT WORK ZONE, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE A QUALIFIED "CROSSING GUARD". THE GUARD SHALL BE PRESENT FOR THE FULL DURATION OF TIME THAT CHILDREN ARE LIKELY TO BE PRESENT.
5. IF THE IMPROVEMENTS NECESSITATE THE OBLITERATION, TEMPORARY OBSTRUCTION, TEMPORARY REMOVAL OR RELOCATION OF ANY EXISTING TRAFFIC PAVEMENT MARKING, SUCH PAVEMENT MARKING SHALL BE RESTORED OR REPLACED WITH LIKE MATERIALS TO THE SATISFACTION OF THE CITY TRAFFIC ENGINEER.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL PERMANENT SIGNS SHOWN ON THE PLANS. STREET NAMES SIGNS SHALL CONFORM IN THEIR ENTIRETY TO CURRENT CITY STANDARDS. ALL OTHER SIGNS SHALL BE STANDARD SIZE UNLESS OTHERWISE SPECIFIED ON THE PLANS. ALL SIGN POSTS SHALL BE INSTALLED IN ACCORDANCE WITH THE CURRENT CITY STANDARDS.
7. WHEN A PROPOSED STREET LIGHT STANDARD IS LOCATED WITHIN FIVE (5') FEET OF ANY PROPOSED SIGN SHOWN ON THE PLANS TO BE MOUNTED ON A SIGNPOST, THE SIGN SHALL BE MOUNTED ON THE STREET LIGHT STANDARD AND THE SIGNPOST SHALL BE ELIMINATED.
8. ALL PERMANENT TRAFFIC CONTROL DEVICES CALLED FOR HEREON SHALL BE IN PLACE AND IN FINAL POSITION PRIOR TO ALLOWING ANY PUBLIC TRAFFIC ONTO THE PORTIONS OF THE ROAD(S) BEING IMPROVED HEREUNDER, REGARDLESS OF THE STATUS OF COMPLETION OF PAVING OR OTHER OFF-SITE IMPROVEMENTS CALLED FOR BY THESE PLANS.
9. STREET SIGNS AND STOP SIGNS SHALL BE INSTALLED PER CITY STANDARD SPECIFICATIONS FOR PLACEMENT OF STREET NAME SIGNS.
10. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY TRAFFIC CONTROL DEVICES AND FLAGGERS TO ENSURE THE SAFETY OF THE PUBLIC IN OR AROUND THE WORK AREA. THE CONTRACTOR SHALL HAVE A CERTIFIED ATSSA TRAFFIC CONTROL TECHNICIAN OR IMSA WORK ZONE SAFETY SPECIALIST SET-UP, MAINTAIN AND/OR REMOVE ALL TRAFFIC CONTROL DEVICES IN THE CITY OF LAS VEGAS RIGHTS OF WAY.
11. WORK IN THE PUBLIC STREETS, ONCE BEGUN, SHALL BE EXPEDITED TO COMPLETION SO AS TO PROVIDE MINIMUM INCONVENIENCE TO ADJACENT PROPERTY OWNERS AND TO THE TRAVELING PUBLIC.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING CITIZENS AREA TRANSIT (C.A.T.) IF THE CONSTRUCTION INTERRUPTS OR RELOCATES A BUS STOP OR HAS AN ADVERSE EFFECT ON BUS SERVICE ON THAT STREET TO ARRANGE FOR TEMPORARY RELOCATION OF STOP.
13. GUARDS SHALL BE OBTAINED BY CONTACTING THE METROPOLITAN POLICE DEPARTMENT SPECIAL EVENTS UNIT (PHONE NO. 229-3442) WHO WILL PROVIDE OFFICERS PROPERLY TRAINED IN TRAFFIC CONTROL. FEES FOR THE USE OF THESE OFFICERS SHALL BE SET UP BY METRO AND WILL BE PAID BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR ALL ARRANGEMETNS WITH METRO.
14. ANY WORK WITHIN 300' OF A SIGNALIZED INTERSECTION WILL BE NIGHT WORK, UNLESS DIRECTED BY THE CITY OF LAS VEGAS TRAFFIC ENGINEER.

CLV DRAWING NO. _____

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 FAX: (702) 804-2099
E:\V24\DWR-Phase1\dwg\Vmp1\VMP1d39.dwg mfong

SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
STRIPING AND SIGNAGE PLAN II

JOB NO. 62A.24.211

SHEET 39
39 OF 45 SHTS

90% SUBMITTAL - NOT FOR CONSTRUCTION

DESIGN:
DRAWN:
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ISSUE EDITOR:
PLOT DATE: 12-08-05
PLOT TIME: 16:06:14

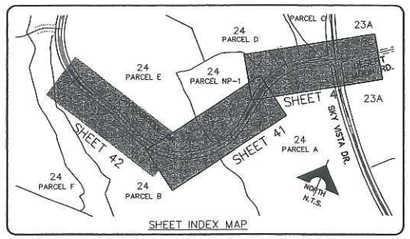
DATE | DESCRIPTION | REV. DATE | DATE ASSN. APP'D | DATE GCW APP'D

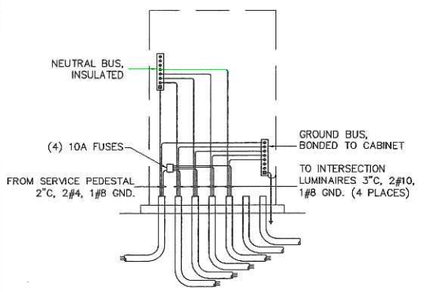
DATE: 12/6/05

ENGINEER - STATE OF NEVADA - No. 10259 - PROFESSIONAL - BRIAN HUGHES - CIVIL - 06/30/2007

sce4258.dwg 020912.dn

PROJECT LOCATION / SHEET INDEX MAP





NOTES:

1. INSTALL FUSES AND WIRING INTO EXISTING TRAFFIC SIGNAL CONTROLLER CABINET.
2. ALL BUSSING SHALL BE COPPER.
3. ALL CONDUCTORS SHALL BE STRANDED 600V THW INSULATED COPPER.

TRAFFIC SIGNAL CONTROLLER CABINET (1/40)

NOT TO SCALE

STREET CLASSIFICATION

CROSSBRIDGE DRIVE — NEIGHBORHOOD COLLECTOR (LEVEL 2) WITH SHARED BIKE LANES AND MEDIAN.

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. 0368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

CITY OF LAS VEGAS STREETLIGHT NOTES

1. ALL STREET LIGHTING INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE STREET LIGHTING PLANS, THE "UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA", LATEST REVISION, AND THE "UNIFORM STANDARD DRAWINGS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA, NEVADA", LATEST REVISION.

2. NO DEVIATION OF STREET LIGHT, PULL BOX, CONDUITS (ETC.) LOCATIONS SHALL BE PERMITTED WITHOUT WRITTEN APPROVAL OF THE TRAFFIC/ELECTRICAL FIELD OPERATIONS DIVISION AND THE CITY ENGINEER. ANY DEVIATION FROM THE PLAN LOCATION WILL REQUIRE COMPLIANCE WITH SECTION 623.L0.03 (E) OF THE SPECIFICATIONS.

3. ALL EXISTING STREET LIGHTING SHALL REMAIN OPERATIONAL DURING CONSTRUCTION.

4. ALL EMPTY CONDUIT SHALL HAVE PULL STRINGS INSTALLED PRIOR TO FINAL INSPECTION.

5. ANY STRUCTURE SUCH AS BLOCK WALLS, CHAIN LINK FENCES, RETAINING WALLS, ETC., SHALL LEAVE A MINIMUM CLEARENCE OF EIGHTEEN INCHES (18") TO THE FACE OF STREET LIGHTING POLE ON ALL SIDES WHEN STREETLIGHT IS INSTALLED BEHIND SIDEWALK, AND SHALL AT NO TIME COMPLETELY ENCLOSE THE STREET LIGHTING POLE.

6. AS-BUILT DRAWINGS SHALL BE SUPPLIED TO THE ELECTRICAL SERVICES SECTION PRIOR TO ANY PRE-FINAL INSPECTION. THE AS-BUILT DRAWING NEEDS TO BE STAMPED AS-BUILT AND SIGNED BY THE PREPARER.

7. SERVICE POINT SHALL BE COORDINATED WITH NEVADA POWER COMPANY, AND WHEREVER POSSIBLE, BE LOCATED NEAR THE CENTER OF THE CIRCUIT. SERVICE POINTS SHALL BE SHOWN ON THE PLANS.

8. IT SHALL BE ASSUMED THAT IN THE ABSENCE OF AN EXISTING, WORKABLE CIRCUIT TO ATTACH TO, ALL INSTALLATIONS SHALL REQUIRE A NEW SERVICE FOR OPERATION OF THE CIRCUIT.

9. WHEREVER THERE IS AN OVERHEAD UTILITY THAT MAY CONFLICT WITH THE INSTALLATION OF STREET LIGHTING CIRCUITS AND/OR POLES, THESE CONFLICTS MUST BE RESOLVED BETWEEN THE DEVELOPER AND THE UTILITIES INVOLVED BEFORE STREETLIGHT BASES ARE INSTALLED AT NO EXPENSE TO THE CITY OF LAS VEGAS.

10. THE CONTRACTOR SHALL FURNISH COMPLETE SERVICE TO TRANSFORMERS AND CONTROL SYSTEMS IF REQUIRED ON PLANS.

ELECTRICAL SERVICE NOTES:

SP5: EXISTING 200 AMP SERVICE PEDESTAL. REFER TO SUMMERLIN VILLAGE 23A UNIT 1 IMPROVEMENTS AND SUMMERLIN VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS FOR ADDITIONAL INFORMATION INCLUDING EXISTING CONNECTED LOADS.

SP4 AND SP6: 200 AMP, SINGLE PHASE, 3 WIRE, 120/240V PAD MOUNTED SERVICE PEDESTALS. FEEDERS FROM N.P.CO. POINTS OF CONNECTION TO BE 2"C, 2#3/0 THW, 1#3/0 WHITE THW (COPPER). TRANSFORMER TO SERVICE PEDESTAL DISTANCES GREATER THAN 195 FEET FOR SPECIFIED CONDUCTORS MUST BE APPROVED BY ENGINEER. SERVICE PEDESTALS SHALL BE LOCATED A MINIMUM OF 30 FEET FROM THE TRANSFORMERS.
THE FOLLOWING SHALL BE INCLUDED IN EACH SERVICE PEDESTAL:
(2) 60 AMP, 240V, 2-POLE CIRCUIT BREAKERS,
(2) 60 AMP, 240V, 2-POLE LIGHTING CONTACTORS,
(2) TEST SWITCHES (ONE FOR EACH CONTACTOR),
PHOTOELECTRIC CONTROL,
(1) 15 AMP, 120V, SINGLE POLE CIRCUIT BREAKER FOR LIGHTING CONTROLS.
CONTRACTOR TO PROVIDE (2) 2" CONDUITS FROM EACH SERVICE PEDESTAL TO FIRST STREETLIGHTING PULLBOX. SERVICE PEDESTALS SHALL COMPLY WITH CLARK COUNTY AREA UNIFORM STANDARD DRAWINGS 330, 331, 332.1 AND 335.1.

GENERAL ELECTRICAL NOTES

1. ALL UNDERGROUND CONDUIT SHALL BE TYPE RNC (RIGID NONMETALLIC CONDUIT), SCHEDULE 40 PVC AND SHALL BE INSTALLED PER USD 404.1419. ABOVE GRADE CONDUIT SHALL BE TYPE RMC (RIGID METALLIC CONDUIT). CONDUIT RISERS SHALL BE TYPE RMC WITH PVC COATING OR TAPE WRAP. ALL CONDUIT WHICH WOULD OTHERWISE BE EMPTY SHALL INCLUDE A NYLON PULLSTRING AND 1#8 FOR LOCATING PURPOSES.

2. ALL CONDUCTORS SHALL BE STRANDED, 600-VOLT, TYPE THW INSULATED COPPER.

3. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ELECTRICAL COMPONENTS AND HARDWARE AS REQUIRED BY THE NATIONAL ELECTRICAL CODE, LATEST EDITION AND SHALL COMPLY WITH THE REQUIREMENTS OF THE INSPECTING AUTHORITY HAVING JURISDICTION.

LEGEND:

- STREETLIGHTING CONDUIT — PROPOSED / EXISTING / FUTURE
- TRAFFIC SIGNAL CONDUIT — PROPOSED / EXISTING / FUTURE
- INTERCONNECT CONDUIT — PROPOSED / EXISTING / FUTURE
- SCHOOL FLASHER CONDUIT — PROPOSED / EXISTING / FUTURE
- STREET LIGHT — PROPOSED / EXISTING / FUTURE
- STREET LIGHT WITH TRAFFIC SIGNAL — PROPOSED / EXISTING / FUTURE
- #3-1/2 PULLBOX, MARKED "STREET LIGHTING", UNLESS OTHERWISE NOTED — PROPOSED / EXISTING / FUTURE
- #5 PULLBOX, MARKED "TRAFFIC SIGNAL", UNLESS OTHERWISE NOTED — PROPOSED / EXISTING / FUTURE
- #7 PULLBOX, MARKED "TRAFFIC SIGNAL", UNLESS OTHERWISE NOTED — PROPOSED / EXISTING / FUTURE
- SERVICE PEDESTAL — PROPOSED / EXISTING / FUTURE
- N.P.C. TRANSFORMER — PROPOSED / EXISTING / FUTURE
- TRAFFIC SIGNAL CONTROLLER — PROPOSED / EXISTING / FUTURE
- (N) SERVICE PEDESTAL DESIGNATION
- (NX) CIRCUIT DESIGNATION — N = SERVICE PEDESTAL, X = CIRCUIT

ELECTRICAL CONSTRUCTION NOTES

1E EXISTING N.P.CO. TRANSFORMER.
2E PROPOSED N.P.CO. TRANSFORMER.
3E EXISTING SP5. REFER TO ELECTRICAL SERVICE NOTES.
4E PROPOSED SP6. REFER TO ELECTRICAL SERVICE NOTES.
5E EXISTING STREETLIGHT PER SUMMERLIN VILLAGE 23A UNIT 1 IMPROVEMENTS.
6E BY OTHERS STREETLIGHT PER SUMMERLIN VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS.
7E PROPOSED TYPE 2B SINGLE LUMINAIRE PER SSD E-1.
8E PROPOSED TYPE 2B TWIN LUMINAIRE PER SSD E-1.
9E PROPOSED TYPE 2A MOD 1 LUMINAIRE WITH PROVISION FOR FUTURE TRAFFIC SIGNAL MAST ARM PER SSD E-1.
10E FUTURE STREETLIGHT.
11E EXISTING NO. 3-1/2 PULLBOX.
12E EXISTING NO. 5 PULLBOX.
13E EXISTING NO. 7 PULLBOX.
14E BY OTHERS TYPE 200 PULLBOX PER SUMMERLIN VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS.
15E PROPOSED NO. 3-1/2 PULLBOX PER USD 326.
16E PROPOSED NO. 5 PULLBOX PER USD 326.
17E PROPOSED 2" CONDUIT CONTAINING 2#4, 1#8 GND [STREETLIGHTING].
18E EXISTING 1-1/4" CONDUIT CONTAINING 2#4, 1#8 GND [STREETLIGHTING].
19E EXISTING 1-1/4" CONDUIT ONLY [STREETLIGHTING].
20E BY OTHERS 4" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL INTERCONNECT] PER SUMMERLIN VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS.
21E PROPOSED 1-1/4" CONDUIT CONTAINING 2#4, 1#8 GND [STREETLIGHTING].
22E PROPOSED 1-1/4" CONDUIT ONLY [STREETLIGHTING].
23E PROPOSED 4" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL INTERCONNECT].
24E FUTURE CONDUIT.
25E STUB OUT AND CAP 5' BEYOND LIMIT OF CONSTRUCTION.
26E CONNECT TO EXISTING CONDUIT STUB.
27E EXISTING TRAFFIC SIGNAL CONTROLLER CABINET. REFER TO DETAIL 1, SHEET 39.
28E EXISTING 2" CONDUIT ONLY [POWER TO TRAFFIC SIGNAL CONTROLLER]. INSTALL 2#4, 1#8 GND IN EXISTING CONDUIT [SP5(C)].
29E EXISTING (5) 3" CONDUITS ONLY [INTERSECTION LUMINAIRES AND TRAFFIC SIGNAL] AND 4" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL INTERCONNECT]. INSTALL 2#10, 1#10 GND IN EACH OF (4)3" EXISTING CONDUITS
30E PROPOSED 3" CONDUIT CONTAINING 2#10, 1#8 GND [INTERSECTION LUMINAIRES].
31E PROPOSED 3" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL].
32E PROPOSED 2" CONDUIT CONTAINING 2#10, 1#8 GND [INTERSECTION LUMINAIRES] AND 2" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL].
33E FUTURE PULLBOX.
34E REMOVE EXISTING PULLBOX. CONNECT PROPOSED CONDUIT TO EXISTING CONDUIT.
35E BY OTHERS 2" CONDUIT ONLY [FUTURE SCHOOL FLASHER] PER SUMMERLIN VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS.
36E PROPOSED 2" CONDUIT ONLY [FUTURE SCHOOL FLASHER].
37E BY OTHERS NO. 3-1/2 PULLBOX PER SUMMERLIN VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS.
38E BY OTHERS NO. 5 PULLBOX PER SUMMERLIN VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS.
39E BY OTHERS 1-1/4" CONDUIT CONTAINING 2#4, 1#8 GND [STREETLIGHTING] PER SUMMERLIN VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS.
40E BY OTHERS 1-1/4" CONDUIT ONLY [STREETLIGHTING] PER SUMMERLIN VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS.
41E PROPOSED 2" CONDUIT ONLY [STREETLIGHTING].
42E PROPOSED SP4.

SERVICE PEDESTAL CIRCUIT CAPACITY VERIFICATION

CIRCUIT NAME:	SP4 (A)		SP4 (B)		SP5 (A)		SP5 (B)		SP5 (C)		SP6 (A)		SP6 (B)	
CIRCUIT TYPE:	STREET LIGHTING (PROPOSED)		STREET LIGHTING (PROPOSED)		STREET LIGHTING (EXISTING)		STREET LIGHTING (EXISTING)		INTERSECTION LIGHTING (EXISTING)		STREET LIGHTING (PROPOSED)		STREET LIGHTING (PROPOSED)	
VOLTAGE:	240		240		240		240		120		240		240	
CIRCUIT CAPACITY:	60		60		60		60		40		60		60	
MAXIMUM CONTINUOUS CURRENT DRAW IS 80% OF CIRCUIT CAPACITY:	48		48		48		48		32		48		48	
EXISTING CIRCUIT LOAD AMPS =	0.00		0.00		9.75		1.00		0.00		0.00		0.00	
	PROPOSED		PROPOSED		PROPOSED		PROPOSED		PROPOSED		PROPOSED		PROPOSED	
PROPOSED LOAD TO CIRCUIT:	QTY.	AMPS	QTY.	AMPS	QTY.	AMPS	QTY.	AMPS	QTY.	AMPS	QTY.	AMPS	QTY.	AMPS
150 WATT SINGLE LUMINAIRES AT 240V = 0.75 AMPS	0	0.00	2	1.50	0	0.00	0	0.00	0	0.00	2	1.50	4	3.00
150 WATT TWIN LUMINAIRES AT 240V = 1.50 AMPS	0	0.00	6	9.00	0	0.00	0	0.00	0	0.00	6	9.00	4	6.00
400 WATT SINGLE LUMINAIRES AT 120V = 4.00 AMPS	0	0.00	0	0.00	0	0.00	0	0.00	4	16.00	0	0.00	0	0.00
TOTAL PROPOSED LOAD AMPS =	0.00		10.50		0.00		0.00		16.00		10.50		9.00	
EXISTING PLUS PROPOSED LOAD AMPS =	0.00		10.50		9.75		1.00		16.00		10.50		9.00	
REMAINING AVAILABLE LOAD AMPS: MAXIMUM - EXISTING - PROPOSED =	48.00		37.50		38.25		47.00		16.00		37.50		39.00	
	FUTURE		FUTURE		FUTURE		FUTURE		FUTURE		FUTURE		FUTURE	
FUTURE LOAD TO CIRCUIT:	QTY.	AMPS	QTY.	AMPS	QTY.	AMPS	QTY.	AMPS	QTY.	AMPS	QTY.	AMPS	QTY.	AMPS
100 WATT SINGLE LUMINAIRES AT 240V = 0.50 AMPS	0	0.00	1	1.50	0	0.00	3	1.50	0	0.00	0	0.00	0	0.00
150 WATT SINGLE LUMINAIRES AT 240V = 0.75 AMPS	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	0.75	3	2.25
150 WATT TWIN LUMINAIRES AT 240V = 1.50 AMPS	7	10.50	0	0.00	0	0.00	10	15.00	0	0.00	0	0.00	0	0.00
TOTAL FUTURE LOAD AMPS =	10.50		1.50		0.00		16.50		0.00		0.75		2.25	
EXISTING PLUS PROPOSED PLUS FUTURE LOAD AMPS =	10.50		12.00		9.75		17.50		16.00		11.25		11.25	
FUTURE REMAINING AVAILABLE LOAD AMPS: MAX. - EX. - PR. - FUT. =	37.50		36.00		38.25		30.50		16.00		36.75		36.75	

Avoid cutting underground utility lines. It's costly. Call before you Dig. 1-800-227-2600



PROFESSIONAL ENGINEER - STATE OF NEVADA - JOHN H. BROWN - No. 16033 - ELECTRICAL

DATE: 12-15-2005

FOR ELECTRICAL COMPONENTS ONLY

PROFESSIONAL ENGINEER - STATE OF NEVADA - BERTRAM HUGHES - No. 10256 - CIVIL

DATE: 1/19/06

90% SUBMITTAL - NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE	BY	APP	DATE

DESIGN: SVW
DRAWN: SVW
CHECK: RDH
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-15-05
PLOT TIME: 10:49:41

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE (702) 804-8000 FAX: (702) 804-8008
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SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
MASTER CONDUIT AND ELECTRICAL PLAN I

JOB NO. 62A.24.211

SHEET 40
40 OF 45 SHTS

CLV DRAWING NO. _____

ELECTRICAL CONSTRUCTION NOTES

1E EXISTING N.P.CO. TRANSFORMER.
2E PROPOSED N.P.CO. TRANSFORMER.
3E EXISTING SP5. REFER TO ELECTRICAL SERVICE NOTES.
4E PROPOSED SP6. REFER TO ELECTRICAL SERVICE NOTES.
5E EXISTING STREETLIGHT PER SUMMERLIN VILLAGE 23A UNIT 1 IMPROVEMENTS.
6E BY OTHERS STREETLIGHT PER SUMMERLIN VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS.
7E PROPOSED TYPE 2B SINGLE LUMINAIRE PER SSD E-1.
8E PROPOSED TYPE 2B TWIN LUMINAIRE PER SSD E-1.
9E PROPOSED TYPE 2A MOD 1 LUMINAIRE WITH PROVISION FOR FUTURE TRAFFIC SIGNAL MAST ARM PER SSD E-1.
10E FUTURE STREETLIGHT.
11E EXISTING NO. 3-1/2 PULLBOX.
12E EXISTING NO. 5 PULLBOX.
13E EXISTING NO. 7 PULLBOX.
14E BY OTHERS TYPE 200 PULLBOX PER SUMMERLIN VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS.
15E PROPOSED NO. 3-1/2 PULLBOX PER USD 326, LABEL STREETLIGHT.
16E PROPOSED NO. 5 PULLBOX PER USD 326, LABEL STREETLIGHT.
17E PROPOSED 2" CONDUIT CONTAINING 2#4, 1#8 GND [STREETLIGHTING].
18E EXISTING 1-1/4" CONDUIT CONTAINING 2#4, 1#8 GND [STREETLIGHTING].
19E EXISTING 1-1/4" CONDUIT ONLY [STREETLIGHTING].
20E BY OTHERS 4" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL INTERCONNECT] PER SUMMERLIN VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS.
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22E PROPOSED 1-1/4" CONDUIT ONLY [STREETLIGHTING].
23E PROPOSED 4" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL INTERCONNECT].
24E FUTURE CONDUIT.

ELECTRICAL CONSTRUCTION NOTES, CONTINUED

25E STUB OUT AND CAP 5' BEYOND LIMIT OF CONSTRUCTION.
26E CONNECT TO EXISTING CONDUIT STUB.
27E EXISTING TRAFFIC SIGNAL CONTROLLER CABINET. REFER TO DETAIL 1, SHEET 39.
28E EXISTING 2" CONDUIT ONLY [POWER TO TRAFFIC SIGNAL CONTROLLER]. INSTALL 2#4, 1#8 GND IN EXISTING CONDUIT [SP5(C)].
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34E REMOVE EXISTING PULLBOX. CONNECT PROPOSED CONDUIT TO EXISTING CONDUIT.
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40E BY OTHERS 1-1/4" CONDUIT ONLY [STREETLIGHTING] PER SUMMERLIN VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS.
41E PROPOSED 2" CONDUIT ONLY [STREETLIGHTING].
42E PROPOSED SP4.

MATCHLINE STATION 79+50 SEE SHEET 42
79+15.15, 0.00' RT
80+75.48, 38.50' LT
80+10.89, 38.50' RT
82+35.31, 6.00' RT
83+80.36, 0.97' RT
85+30.33, 0.00' RT
86+80.26, 0.70' LT
88+28.73, 6.00' LT
89+27.93, 39.71' RT
CROSSBRIDGE DRIVE
FUTURE PUBLIC ENTRY
CONDUIT IN MEDIAN ISLANDS SHALL BE INSTALLED 1' FROM BACK OF CURB AND SHALL SWEEP INTO STREETLIGHT FOUNDATIONS.
MATCHLINE STATION 92+00 SEE BELOW LEFT
90+51.32, 42.76' LT
91+53.97, 6.00' RT
NORTH
SCALE 1" = 40'
40 0 40 80
SCALE FEET
95+84.33, 44.50' LT
96+86.92, 5.82' LT
95+28.71, 44.50' RT
98+89.51, 46.11' LT
98+39.77, 8.50' LT
99+41.39, 67.36' RT
100+34.45, 66.85' LT
100+68.33, 38.48' RT
LIMIT OF ROADWAY IMPROVEMENTS
DESERT MOON ROAD
SKY VISTA DRIVE
MATCHLINE STATION 92+00 SEE ABOVE RIGHT
91+51.32, 42.76' LT
91+53.97, 6.00' RT
93+63.71, 6.00' LT

ENGINEER'S CERTIFICATION OF RESPONSIBILITY
STATE OF NEVADA
JOHN BROWN
Exp. 12/31/2006
ELECTRICAL
No. 16033
DATE: 12-15-2005
FOR ELECTRICAL COMPONENTS ONLY

Avoid cutting underground utility lines. It's costly. Call before you Dig. 1-800-227-2600 UNDERGROUND SERVICE ALERT (USA)
AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY. CALL BEFORE YOU DO OVERHEAD. CALL 1-702-593-6111

DESIGN: SVW
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CHECK: RDH
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12-15-05
PLOT TIME: 10:51:09

NO.	DESCRIPTION	DATE	APP'D	DATE	ENGR.	APP'D
1	90% SUBMITTAL - NOT FOR CONSTRUCTION	12/15/05				

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
5555 S. EASTERN AVE. LAS VEGAS, NEVADA 89119
TELEPHONE: (702) 804-8000 FAX: (702) 804-8001
gcwallace@gcwallace.com
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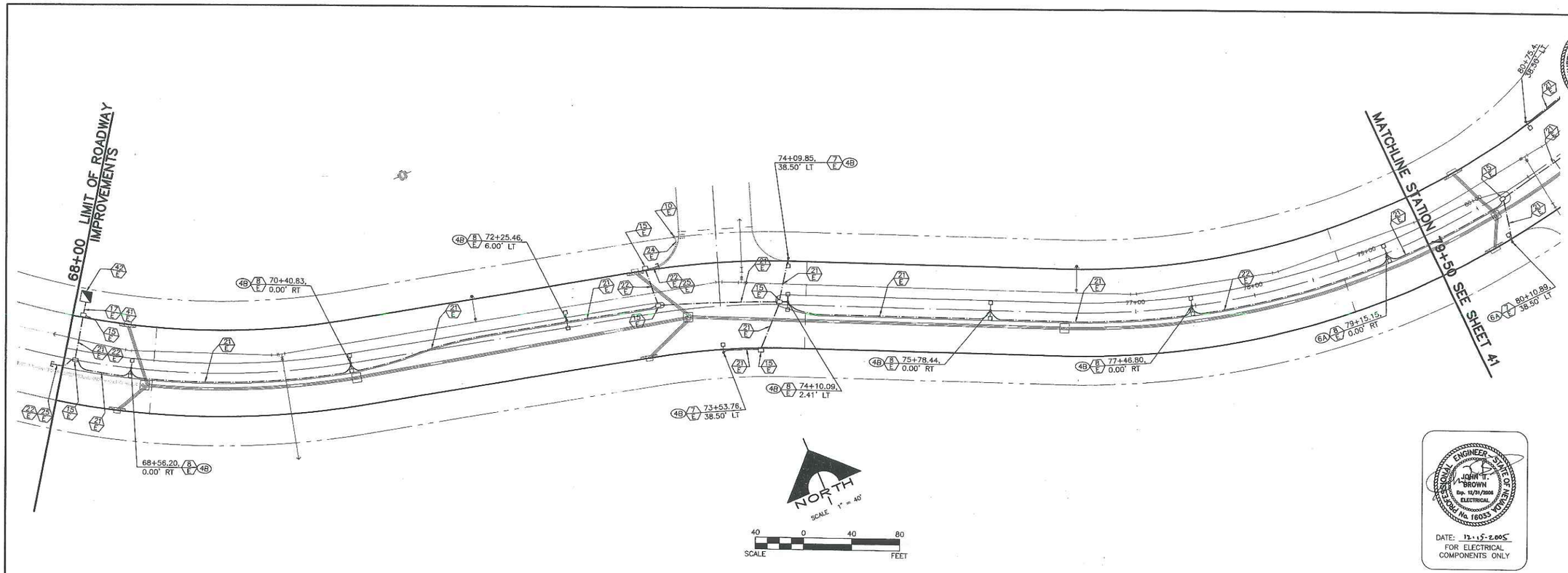
SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
MASTER CONDUIT AND ELECTRICAL PLAN II

JOB NO. 62A.24211
SHEET 41
41 OF 45 SHTS
CLV DRAWING NO.



ELECTRICAL CONSTRUCTION NOTES

1E EXISTING N.P.CO. TRANSFORMER.

2E PROPOSED N.P.CO. TRANSFORMER.

3E EXISTING SP5. REFER TO ELECTRICAL SERVICE NOTES.

4E PROPOSED SP6. REFER TO ELECTRICAL SERVICE NOTES.

5E EXISTING STREETLIGHT PER SUMMERLIN VILLAGE 23A UNIT 1 IMPROVEMENTS.

6E BY OTHERS STREETLIGHT PER SUMMERLIN VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS.

7E PROPOSED TYPE 2B SINGLE LUMINAIRE PER SSD E-1.

8E PROPOSED TYPE 2B TWIN LUMINAIRE PER SSD E-1.

9E PROPOSED TYPE 2A MOD 1 LUMINAIRE WITH PROVISION FOR FUTURE TRAFFIC SIGNAL MAST ARM PER SSD E-1.

10E FUTURE STREETLIGHT.

11E EXISTING NO. 3-1/2 PULLBOX.

12E EXISTING NO. 5 PULLBOX.

13E EXISTING NO. 7 PULLBOX.

14E BY OTHERS TYPE 200 PULLBOX PER SUMMERLIN VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS.

15E PROPOSED NO. 3-1/2 PULLBOX PER USD 326.

16E PROPOSED NO. 5 PULLBOX PER USD 326.

17E PROPOSED 2" CONDUIT CONTAINING 2#4, 1#8 GND [STREETLIGHTING].

18E EXISTING 1-1/4" CONDUIT CONTAINING 2#4, 1#8 GND [STREETLIGHTING].

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22E PROPOSED 1-1/4" CONDUIT ONLY [STREETLIGHTING].

23E PROPOSED 4" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL INTERCONNECT].

24E FUTURE CONDUIT.

25E STUB OUT AND CAP 5' BEYOND LIMIT OF CONSTRUCTION.

26E CONNECT TO EXISTING CONDUIT STUB.

27E EXISTING TRAFFIC SIGNAL CONTROLLER CABINET. REFER TO DETAIL 1, SHEET 39.

28E EXISTING 2" CONDUIT ONLY [POWER TO TRAFFIC SIGNAL CONTROLLER]. INSTALL 2#4, 1#8 GND IN EXISTING CONDUIT [SP5(C)].

29E EXISTING (5) 3" CONDUITS ONLY [INTERSECTION LUMINAIRES AND TRAFFIC SIGNAL] AND 4" CONDUIT ONLY [FUTURE TRAFFIC SIGNAL INTERCONNECT]. INSTALL 2#10, 1#10 GND IN EACH OF (4)3" EXISTING CONDUITS

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33E FUTURE PULLBOX.

34E REMOVE EXISTING PULLBOX. CONNECT PROPOSED CONDUIT TO EXISTING CONDUIT.

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38E BY OTHERS NO. 5 PULLBOX PER SUMMERLIN VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS.

39E BY OTHERS 1-1/4" CONDUIT CONTAINING 2#4, 1#8 GND [STREETLIGHTING] PER SUMMERLIN VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS.

40E BY OTHERS 1-1/4" CONDUIT ONLY [STREETLIGHTING] PER SUMMERLIN VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS.

41E PROPOSED 2" CONDUIT ONLY [STREETLIGHTING].

42E PROPOSED SP4.

STATE OF NEVADA — PROFESSIONAL ENGINEER — BRIAN L. ALBRECHT — No. 10253 — CIVIL

STATE OF NEVADA — PROFESSIONAL ENGINEER — JOHN T. BROWN — No. 16035 — ELECTRICAL

DATE: 12-15-2005
FOR ELECTRICAL COMPONENTS ONLY

NO.	DESCRIPTION	DATE
1	90% SUBMITTAL - NOT FOR CONSTRUCTION	12-15-05

DESIGN: SVW
DRAWN: SVW
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ISSUE DATE: 12-15-05
ISSUE EDITOR:
PLOT DATE: 12-15-05
PLOT TIME: 10:54:07

DATE: APP: DATE: APP:

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2239
spcode
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SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
MASTER CONDUIT AND ELECTRICAL PLAN III

JOB NO. 62A.24.211

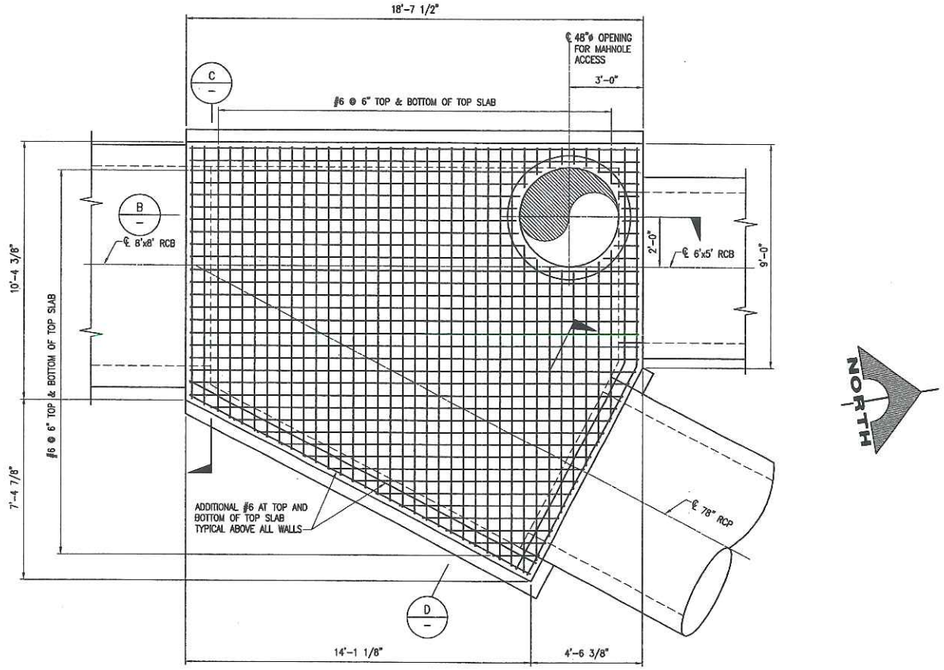
SHEET 42
42 OF 45 SHTS

CLV DRAWING NO.

Avoid cutting underground utility lines. It's costly.
Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE ALERT (USA)

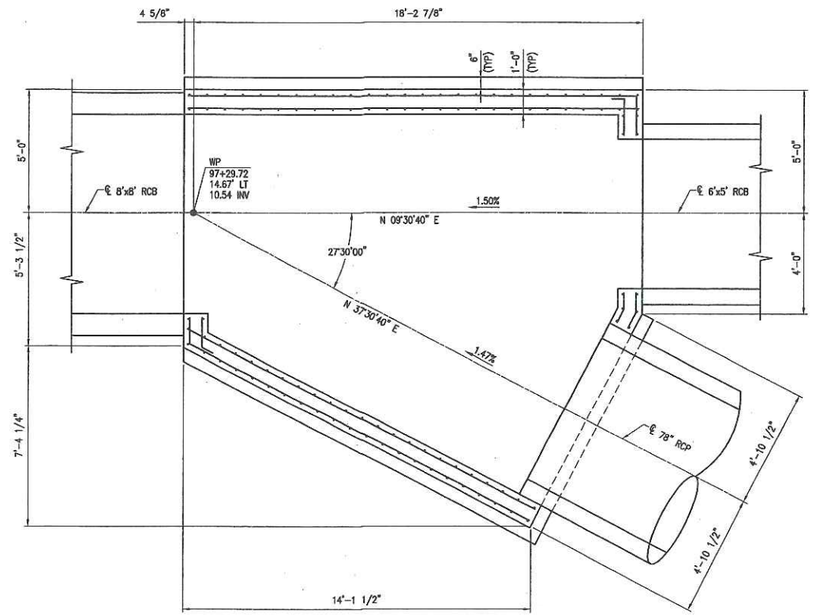
AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY
CALL BEFORE YOU TOUCH OVERHEAD
CALL 1-702-593-6111

sm2438.dwg 020312.ln



JUNCTION STRUCTURE PLAN - 97+29.72, 14.67' LT

SCALE: 3/8" = 1'-0"



SECTION

SCALE: 3/8" = 1'-0" — A

GENERAL NOTES:

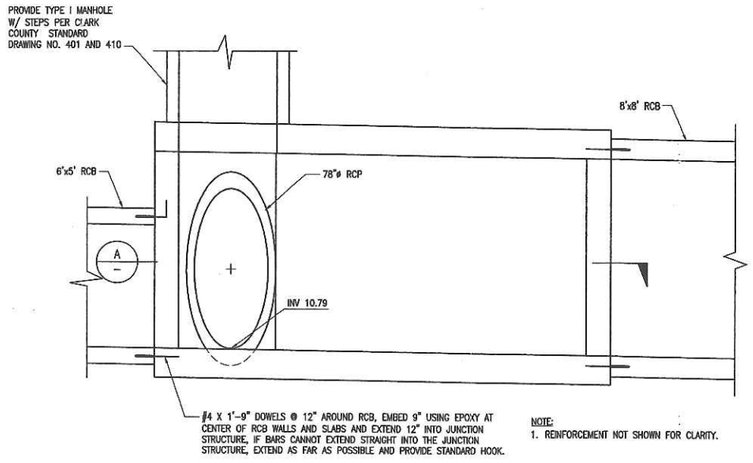
CONCRETE: ALL CONCRETE SHALL BE CLASS D MODIFIED WITH AN ULTIMATE COMPRESSIVE STRENGTH f'c=4500psi AT 28 DAYS. ALL CONCRETE SHALL BE MADE USING TYPE V CEMENT. ALL EXPOSED CORNERS SHALL BE BEVELED 3/4" UNLESS OTHERWISE NOTED.

REINFORCING STEEL: ALL REINFORCING STEEL SHALL BE ASTM A615, GRADE 60. DIMENSIONS RELATING TO BAR SPACING ARE CENTER TO CENTER. BENDING DIMENSIONS ARE FROM OUT TO OUT OF BARS. MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 2" UNLESS OTHERWISE NOTED. HOOKS MAY BE ROTATED OR TILTED, AS NECESSARY, TO PROVIDE PROPER CLEARANCES.

BEDDING MATERIAL: BEDDING MATERIAL SHALL BE 6" OF CLARK COUNTY TYPE II AGGREGATE. THE BEDDING LAYER SHALL BE COMPACTED TO AT LEAST 90 PERCENT OF THE MAXIMUM DRY DENSITY AS ESTABLISHED BY ASTM TEST METHOD D-1557.

EXISTING UTILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES WITHIN THE WORK AREA, AND PROVIDING PROTECTION FOR THE VARIOUS UTILITIES AFFECTED, BEFORE PROCEEDING WITH THE WORK.

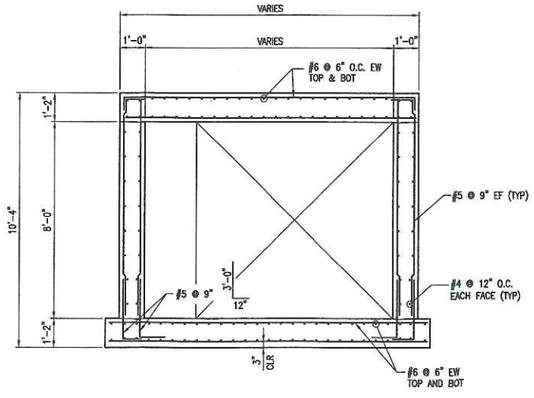
EPOXY: SIMPSON STRONG-TIE SET ADHESIVE (ICBO ER-5279). INSTALL PER THE ICBO EVALUATION REPORT AND THE MANUFACTURER'S WRITTEN INSTRUCTIONS.



NOTE:
1. REINFORCEMENT NOT SHOWN FOR CLARITY.

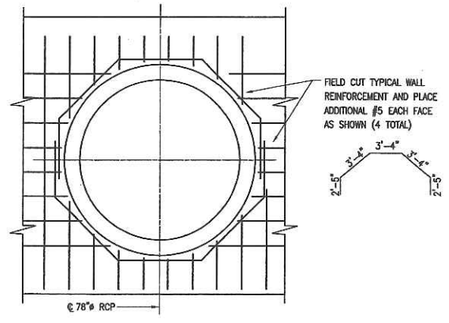
SECTION

SCALE: 3/8" = 1'-0" — B



SECTION

SCALE: 3/8" = 1'-0" — C



SECTION

SCALE: 3/8" = 1'-0" — D

CLV DRAWING NO. _____

RIMAH I. NAZAL
No. 12141
Exp. 12/31/2007
CIVIL
STATE OF NEVADA
PROFESSIONAL ENGINEER

DATE: 11/1/06

REV.	DATE	DESCRIPTION	DATE: AGEN. APP.	DATE: DCW. APP.

DESIGN: RIN
DRAWN: NO
CHECK: RIN
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 01-04-06
PLOT TIME: 15:54:11

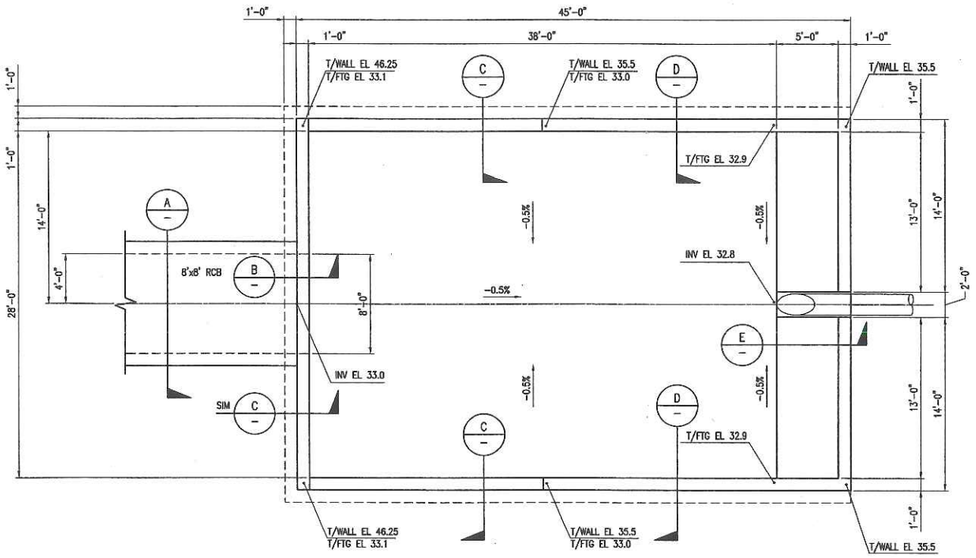
90% SUBMITTAL - NOT FOR CONSTRUCTION

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD. LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
RNazal
G:\62A-W04-301\dwg\Improv\Struct\DWR1c043.dwg

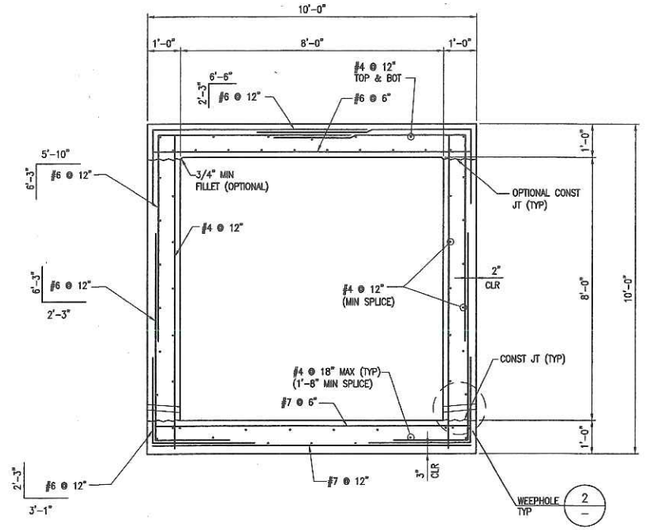
SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
STORM DRAIN STRUCTURAL DETAILS I

JOB NO. 62A.24.211

DRAWING 43
43 OF 45 SHTS

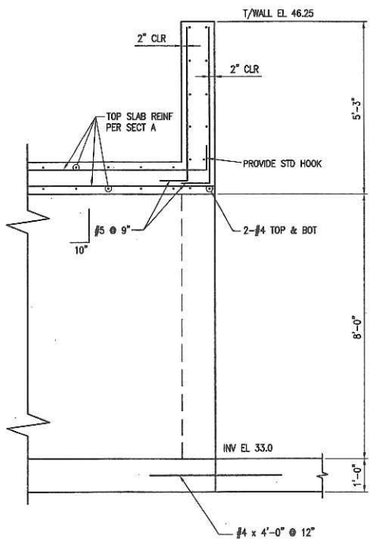


STILLING BASIN PLAN (1)
SCALE: 3/16" = 1'-0"

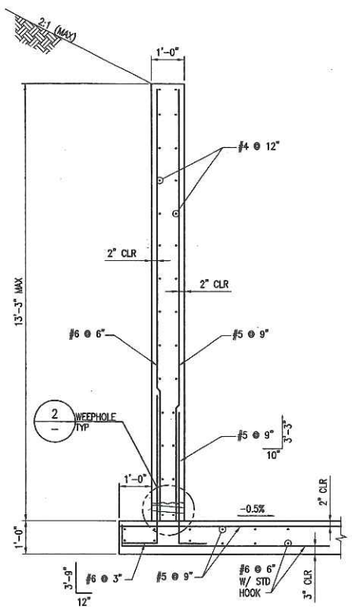


SECTION (A)
SCALE: 1/2" = 1'-0"

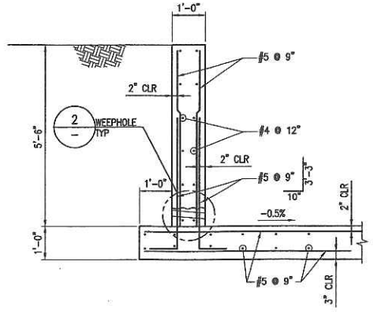
NOTE:
SEE STRUCTURAL DETAILS I DRAWING FOR GENERAL NOTES.



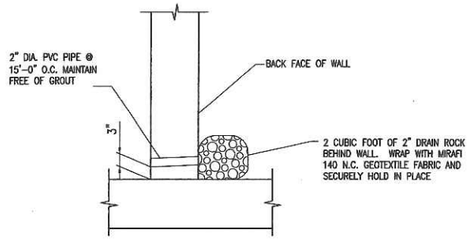
SECTION (B)
SCALE: 1/2" = 1'-0"



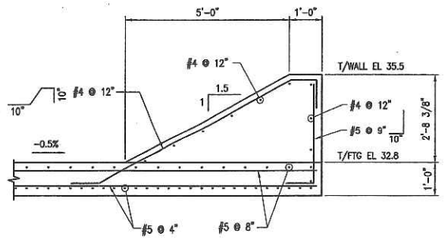
SECTION (C)
SCALE: 1/2" = 1'-0"



SECTION (D)
SCALE: 1/2" = 1'-0"



DETAIL (2)
SCALE: 3/4" = 1'-0"



SECTION (E)
SCALE: 1/2" = 1'-0"

CLV DRAWING NO. _____

STATE OF NEVADA — PROFESSIONAL ENGINEER — RYAN L. NAZELI — No. 12471 — 12/31/2007 — CIVIL — STRUCTURAL
DATE: 11/16/06

DESCRIPTION	REV.	DATE	APP.
90% SUBMITTAL - NOT FOR CONSTRUCTION			

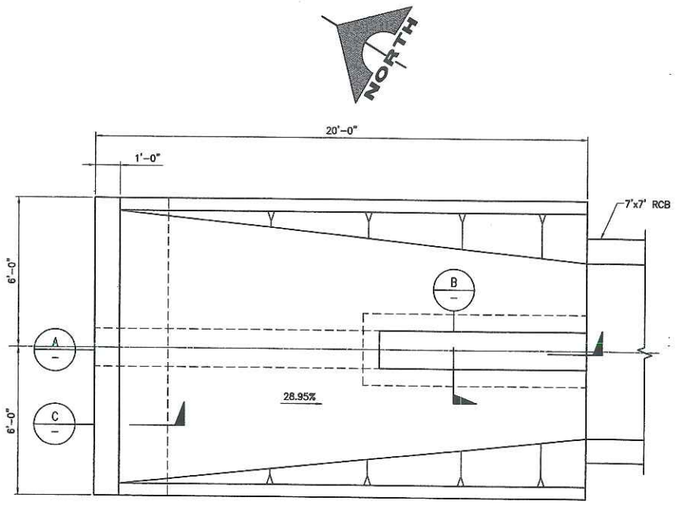
DESIGN: RIN
DRAWN: RIN
CHECK: RIN
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 01-04-06
PLOT TIME: 15:53:35

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
G:\62A-1804-3011\dwg\Struct\DWR1c044.dwg Rizzard

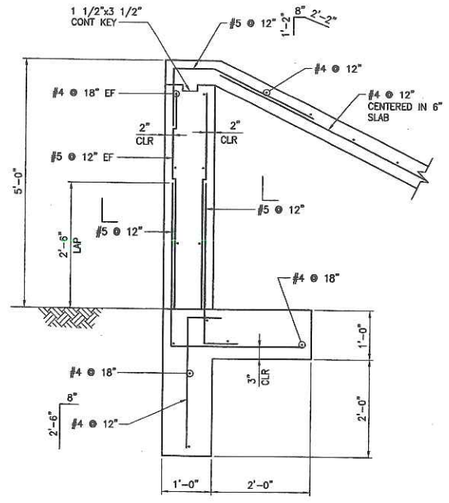
SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
STORM DRAIN STRUCTURAL DETAILS II

JOB NO. 62A.24.211

DRAWING
44
44 OF 45 SHTS

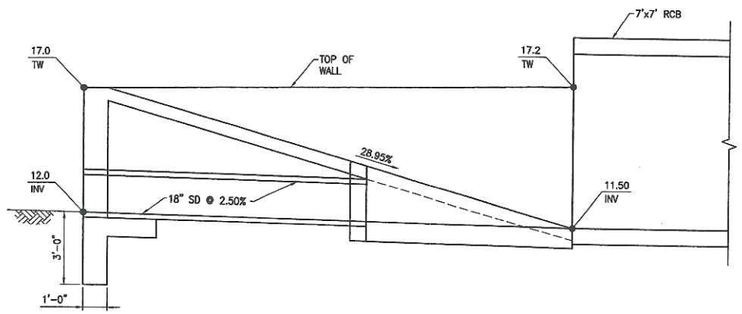


RCB INLET PLAN
SCALE: 3/8" = 1'-0"

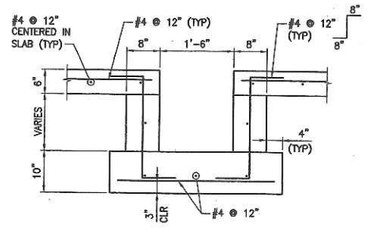


SECTION
SCALE: 3/4" = 1'-0"
C

NOTE:
SEE STRUCTURAL DETAILS I DRAWING FOR GENERAL NOTES.



SECTION
SCALE: 3/8" = 1'-0"
A



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

CLV DRAWING NO. _____

STATE OF NEVADA
PROFESSIONAL ENGINEER
RIMAH I. NAZAL
No. 12121
DATE: 1/4/06

DESCRIPTION	REV. DATE	DATE ASEN. APP.	DATE SCHL. APP.

DESIGN: RIN
DRAWN: NO
CHECK: RIN
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 01-04-06
PLOT TIME: 15:56:55

90% SUBMITTAL - NOT FOR CONSTRUCTION

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
G:\62A-1804-301\Land Mitigation\Storm\45345.dwg RNazal

SUMMERLIN
VILLAGE 24 UNIT 1 IMPROVEMENTS
STORM DRAIN STRUCTURAL DETAILS III

JOB NO. 62A.24.211

DRAWING
45
45 OF 45 SHTS

62428.dwg 5/3/2006 9:56:55 AM

HA 243.1

RESPONSE TO COMMENTS ON THE TECHNICAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 24 – PARCEL B

62024.810

January 2005

Prepared for:

The Howard Hughes Corporation
10000 West Charleston, Suite 200
Las Vegas, Nevada 89134
Phone: (702) 791-4000
FAX: (702) 791-4385

G. C. WALLACE, INC.
Engineers/Planners/Surveyors

CITY OF LAS VEGAS
INTER-OFFICE MEMORANDUM

TO: Land Development Services, Department of Public Works	**DATE:** February 4, 2005 AHS
	FROM: Albert Sung, P.E., Flood Control Project Engineer, Department of Public Works
SUBJECT: Drainage Study for: SMRLN V24 – Parcel B	**COPIES TO:** G.C. Wallace, Inc.
Cross Streets: NWC of Charleston Blvd. & Sky Vista Drive	Howard Hughes Corporation
File Number: F:\Depot\DSMemos\DS3706B.doc	Bart Anderson, P.E., DevCo
Parcel Number: 137-22-000-011	
Zoning Action: TMP-4175	
FEMA Flood Zone YES NO X	
Proposed Storm Drain YES NO X	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Transaction #
1st Submittal	12/2/2004	12/16/2004	Not Approved	$400.00	13124: $400
2nd Submittal	1/13/2005 & 1/28/2005	2/4/2005	See Comments Below	$400.00	14694: $400
			TOTAL FEES (LDDRS):	$800.00	—

REMARKS:

The Drainage Study for the subject project has been reviewed and:

X	is approved subject to conformance to all City standards and the following conditions:
	must be resubmitted or supplemented including the following:
	is conditionally approved subject to Clark County Regional Flood Control District concurrence.

The following comments are repeated until they are complete:

1. *The engineer must provide a table on the grading plans that shows a quantity estimate of all drainage improvements within Public Drainage Easements. All drainage improvements within Public Drainage Easements must be bonded and inspected.*
2. *All drainage easements must be "Common Lots" and "Public Drainage Easement to be privately maintained by the Homeowners Association" to be labeled in the grading plan and recorded as such on the final map.*
3. *Private streets must be public drainage easements. Provide a note on the grading plans "Note: All private streets are P.U.E., Public Sewer Easements, and Public Drainage Easements to be privately maintained by HOA."*
4. *All wrought iron gates and bollards must be constructed per City of Las Vegas Standard Drawing 421 Series.*

Post-it® Fax Note 7671

To Randy Gremlich	Date # of pages ▶
Co./Dept. GCW	From Albert Sung
Phone #	Co. CLV
Fax # 804-2299	Phone #
	Fax #

NOTE: Any future changes to the proposed design (or design assumptions) as outlined in the approved drainage study and attached preliminary grading plan which affect drainage must be addressed in a Drainage Study Amendment and accepted by the City of Las Vegas Flood Control Section. Additionally, conditional acceptance of a drainage study is valid for a period of one (1) year. If the proposed construction has not been completed in that time period, the City of Las Vegas reserves the right to require additional conditions and/or submission and acceptance of a complete drainage study update prior to further construction of a project.

NOTE: Please be advised that all land surface area disturbances over 1 acre or any area adjacent to a water way must submit to the Nevada Division of Environmental Protection a "Notice of Intent" to discharge that certifies a stormwater pollution prevention plan has been developed and is maintained on site; for inclusion in the Stormwater General Permit No. NVR100000. A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. For more information, including forms and applications see http://ndep.nv.gov/bwpc/storm01.htm or call (775) 687-9429.

END OF REMARKS

ays

T/R/S: T20S/R59E/34
AREA K-34

HYDROLOGIC CRITERIA AND DESIGN MANUAL

TIME OF CONCENTRATION

G. C. WALLACE, INC.
Engineers/Planners/Surveyors

Summerlin Village 24
Parcel B
Developed Onsite Conditions

Project No: 62024.810
Date: 21-Sep-04
Calculated by: ck

SUB-BASIN DATA						INITIAL / OVERLAND TIME (Ti)			TRAVEL TIME (Tt)					Tc CHECK URBANIZED BASINS		Tc	Tlag	REMARKS
DESIG: (1)	DEV./EX. (D or E)	CN (16)	K (2)	AREA Ac (3)	AREA Sq Mi (4)	INITIAL LENGTH Feet (5)	SLOPE % (6)	Ti Min (7)	TRAVEL LENGTH Feet (8)	SLOPE % (9a)	V1 VELOCITY fps (9b)	V2 VELOCITY fps (10)	Tt Min (11)	TOTAL LENGTH Feet (12)	Tc = (L/180)+10 Min (13)	Min (14)	Tlag = 0.6Tc/60 Hours (15)	Remarks:
ON1	D	91	0.8112	12.7	0.0198	120	1.0	5.7	2175	4.60	4.3	6.6	6.2	2295	22.8	11.9	**0.119**	
ON2	D	91	0.8112	6.2	0.0097	120	1.0	5.7	1076	4.45	4.3	6.5	3.4	1196	16.6	9.1	**0.091**	
ON3	D	91	0.8112	7.8	0.0122	120	1.0	5.7	1722	4.32	4.2	6.4	5.2	1842	20.2	10.9	**0.109**	

$Tc = Ti + Tt$ $Tlag = 0.6\ Tc$

$Ti = 1.8\ (1.1 - K)\ L^{1/2} / S^{1/3}$

$K = 0.0132\ (CN) - 0.39$

For the travel time (Tt) calculations,
V1 applies to the first 500 feet of travel distance;
V2 applies to the remaining travel distance.

Existing: $V1 = 14.8*(S/100)^{1/2}$ $V2 = 29.4*(S/100)^{1/2}$

Developed: $V1 = 20.2*(S/100)^{1/2}$ $V2 = 30.6*(S/100)^{1/2}$

REFERENCE:

STANDARD FORM 4

```
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              JUN   1998               *
*           VERSION 4.1                 *
*                                       *
*  RUN DATE   21SEP04  TIME  09:32:22   *
*                                       *
*****************************************
```

```
*   U.S. ARMY CORPS OF ENGINEERS        *
*   HYDROLOGIC ENGINEERING CENTER       *
*         609 SECOND STREET             *
*      DAVIS, CALIFORNIA 95616          *
*          (916) 756-1104               *
*                                       *
*****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

```
1                                   HEC-1 INPUT                                   PAGE  1

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

              *DIAGRAM
   1          ID   ***************************************************************
   2          ID   * ............................................................ *
   3          ID   * :                  SUMMERLIN VILLAGE 24                    : *
   4          ID   * :                       PARCEL B                           : *
   5          ID   * :                                                          : *
   6          ID   * :                  PROPOSED CONDITIONS                     : *
   7          ID   * :                   DEVELOPED ONSITE                       : *
   8          ID   * :                                                          : *
   9          ID   * :...........................................................: *
  10          ID   * :              RETURN PERIOD_ _ _ _100-YEAR                : *
  11          ID   * :              DISTRIBUTUION_ _ _ _6-HOUR SDN3             : *
  12          ID   * :              PROJECT NO_ _ _ _ _ 62024.810               : *
  13          ID   * :              FILENAME_ _ _ _ _ _   PRO.H1                : *
  14          ID   * :              DATE_ _ _ _ _ _ _ _   9/21/04               : *
  15          ID   * :...........................................................: *
  16          ID
  17          ID        DEPTH AREA REDUCTION FACTOR
  18          ID                SQ MILES            DARF
  19          ID                   0-.1             1.0
  20          ID                 10-YEAR           .575
  21          ID
  22          IT       5       0       0     300
  23          IO       5
  24          IN       5       0       0
  25          JR    PREC       1    .575
              *

  26          KK     ON1
  27          KM   DEVELOPED ONSITE SUBBASIN ON1
  28          KM            AREA  12.65 ACRES
  29          BA   .0198
  30          PB    3.34
  31          PC    .000    .020    .057    .070    .087    .108    .124    .130    .130    .130
  32          PC    .130    .130    .130    .133    .140    .142    .148    .158    .172    .181
  33          PC    .190    .197    .199    .200    .201    .204    .214    .229    .241    .249
  34          PC    .251    .256    .270    .278    .281    .283    .295    .322    .352    .409
  35          PC    .499    .590    .710    .744    .781    .812    .819    .835    .851    .856
  36          PC    .860    .868    .876    .888    .910    .926    .937    .950    .970    .976
  37          PC    .982    .985    .987    .989    .990    .993    .993    .994    .995    .998
  38          PC    .998    .999    1.00
  39          LS       0      91
  40          UD   0.119
              *

  41          KK     ON2
  42          KM   DEVELOPED ONSITE SUBBASIN ON2
  43          KM            AREA 6.23 ACRES
  44          BA   .0097
  45          LS       0      91
  46          UD   0.091
              *
1                                   HEC-1 INPUT                                   PAGE  2

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  47          KK     CP1
  48          KM  CONCENTRATION POINT CP1
  49          KM  COMBINE ON1 AND ON2
  50          HC       2
              *
```

```
          54          BA   .0122
          55          LS      0      91
          56          UD   0.109
                      *
                      *
          57          KK     CP2
          58          KM  CONCENTRATION POINT CP1
          59          KM  COMBINE CP1 AND ON3
          60          HC       2
                      *
          61          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

    26         ON1
                 .
                 .
    41           .          ON2
                 .            .
                 .            .
    47         CP1............
                 .
                 .
    51           .          ON3
                 .            .
                 .            .
    57         CP2............

  (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              JUN   1998               *
*            VERSION 4.1                *
*                                       *
*  RUN DATE   21SEP04  TIME  09:32:22   *
*                                       *
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*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*           (916) 756-1104              *
*                                       *
*****************************************

*****************************************************************
* ............................................................. *
* :                  SUMMERLIN VILLAGE 24                     : *
* :                       PARCEL B                            : *
* :                                                           : *
* :                  PROPOSED CONDITIONS                      : *
* :                   DEVELOPED ONSITE                        : *
* :                                                           : *
* :...........................................................: *
* :            RETURN PERIOD_ _ _ _100-YEAR                   : *
* :            DISTRIBUTUION_ _ _ _6-HOUR SDN3                : *
* :            PROJECT NO_ _ _ _ _62024.810                   : *
* :            FILENAME_ _ _ _ _ _   PRO.H1                   : *
* :            DATE_ _ _ _ _ _ _ _   9/21/04                  : *
* :...........................................................: *
*****************************************************************

     DEPTH AREA REDUCTION FACTOR
          SQ MILES          DARF
            0-.1            1.0
           10-YEAR          .575


  23 IO        OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL          0.  HYDROGRAPH PLOT SCALE

     IT         HYDROGRAPH TIME DATA
                     NMIN          5  MINUTES IN COMPUTATION INTERVAL
                    IDATE      1   0  STARTING DATE
                    ITIME       0000  STARTING TIME
                       NQ        300  NUMBER OF HYDROGRAPH ORDINATES
                   NDDATE      2   0  ENDING DATE
                   NDTIME       0055  ENDING TIME
                   ICENT         19  CENTURY MARK

                COMPUTATION INTERVAL      .08 HOURS
                    TOTAL TIME BASE   24.92 HOURS

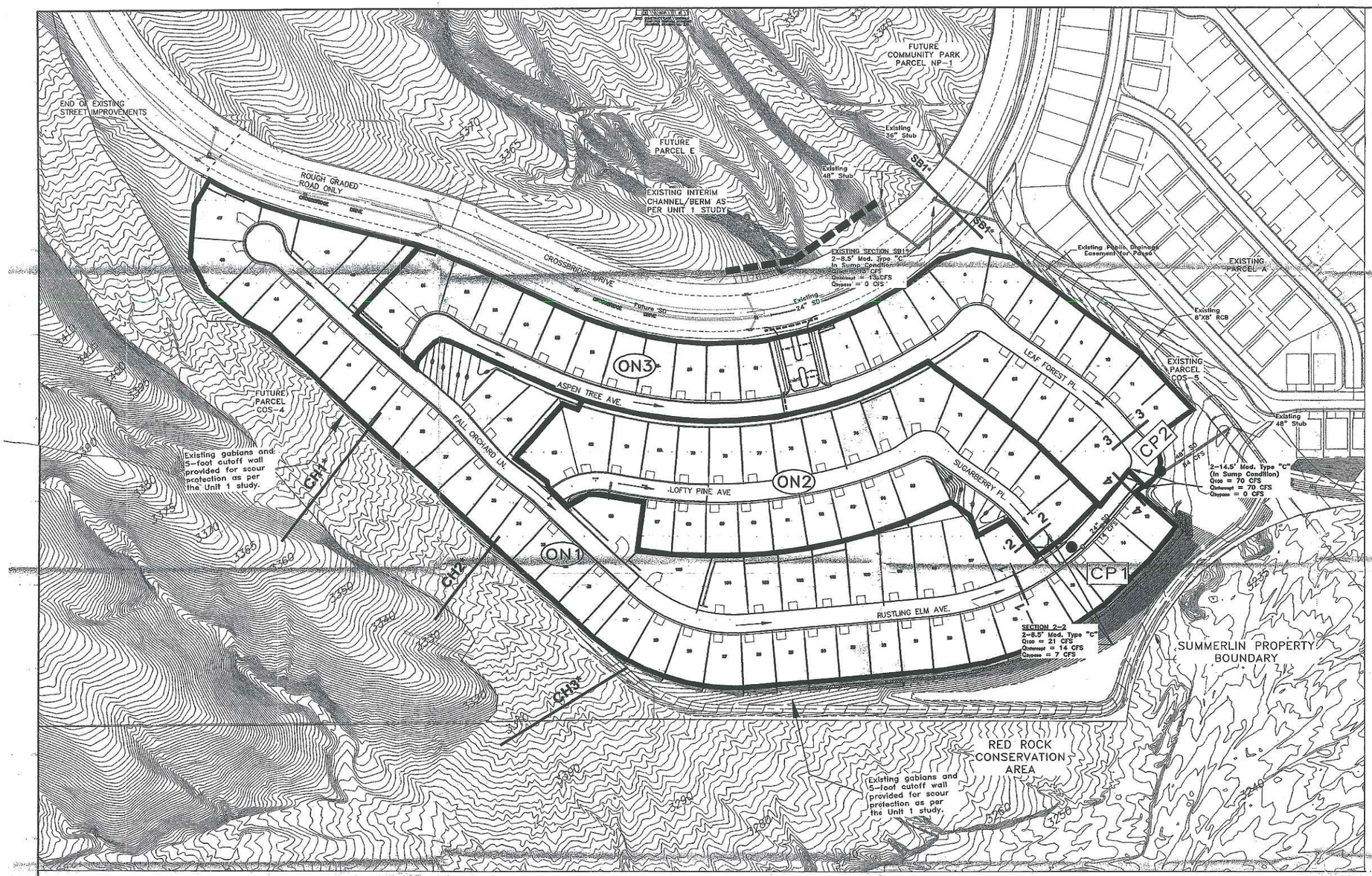
          ENGLISH UNITS
               DRAINAGE AREA         SQUARE MILES
               PRECIPITATION DEPTH   INCHES
               LENGTH, ELEVATION     FEET
               FLOW                  CUBIC FEET PER SECOND
               STORAGE VOLUME        ACRE-FEET
               SURFACE AREA          ACRES
               TEMPERATURE           DEGREES FAHRENHEIT

     JP         MULTI-PLAN OPTION
                    NPLAN          1  NUMBER OF PLANS
```

PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN		RATIOS APPLIED TO PRECIPITATION RATIO 1	RATIO 2
					1.00	.57
HYDROGRAPH AT						
+	ON1	.02	1	FLOW	39.	19.
				TIME	3.58	3.58
HYDROGRAPH AT						
+	ON2	.01	1	FLOW	21.	10.
				TIME	3.50	3.50
2 COMBINED AT						
+	CP1	.03	1	FLOW	59.	28.
				TIME	3.50	3.50
HYDROGRAPH AT						
+	ON3	.01	1	FLOW	24.	12.
				TIME	3.50	3.50
2 COMBINED AT						
+	CP2	.04	1	FLOW	84.	40.
				TIME	3.50	3.50

*** NORMAL END OF HEC-1 ***



SUMMARY OF HEC-1 MODEL

BASIN/ CONCENTRATION POINT	AREA (ac)	Q100 (cfs)	Q10 (cfs)
ON1	12.65	39	19
ON2	6.23	21	10
CP1	–	59	28
ON3	7.81	24	12
CP2	–	84	40

STREET SECTIONS	DISCHARGE (cfs)	CHANNEL SLOPE (%)	ACTUAL DEPTH (ft)	VELOCITY (ft/s)	VxD
SECTION 1-1	39	2.0	0.5	4.6	2.3
SECTION 2-2	21	4.3	0.4	5.3	2.1
SECTION 3-3	24	5.4	0.4	5.9	2.4
SECTION 4-4	46	2.0	0.6	4.9	2.9
SECTION SB1*	13	1.6	0.4	3.2	1.3

REFERENCED CHANNEL CROSS SECTION	DISCHARGE (cfs)	ACTUAL DEPTH (ft)	VELOCITY (ft/s)	SCOUR PROTECTION REQUIRED
CH1*	1900	0.9	9.2	Gabions/5-foot cutoff wall
CH2*	1900	1.2	11.2	Gabions/5-foot cutoff wall
CH3*	1900	0.8	8.9	Gabions/5-foot cutoff wall

*REFERENCED FROM THE SUMMERLIN VILLAGE 24 UNIT 1 STUDY

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ISSUE DATE:
ISSUE EDITION:
PLOT DATE: 11-20-04
PLOT TIME: 15:42:25

DATE | DES. | APP. | DATE | DESCRIPTION | REV. | DATE

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE (702) 804-2600 • FAX (702) 804-2345

O:\62024-2810\Drawings\Parcel B\Map\Dft_5.dwg

SUMMERLIN VILLAGE 24
PARCEL B
FIGURE 5
ULTIMATE CONDITIONS DRAINAGE MAP

SHEET
FIG 5
OF SHTS

SUMMERLIN

SM

VILLAGE 24 PARCEL B IMPROVEMENTS

"SHADOW POINT" - UNIT 1

CITY OF LAS VEGAS
STATE OF NEVADA
A.P.N. 137-22-000-011

DEVELOPER

The Howard Hughes Corporation SM
An Affiliate of THE ROUSE COMPANY

THE HOWARD HUGHES CORPORATION
a Delaware corporation

10000 W. CHARLESTON, SUITE 200
LAS VEGAS, NEVADA 89135
OFFICE PHONE NO. (702) 791-4300
OFFICE FAX NO. (702) 791-4450

ENGINEER

G.C. WALLACE, INC.
Engineers/Planners/Surveyors

1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
OFFICE: (702) 804-2000, FAX: (702) 804-2299
SUMMERLIN OFFICE 10000 CHARLESTON BLVD., STE. 130
OFFICE: (702) 804-2160, FAX: (702) 804-2295

APPROVALS

CLV PLANNING DEPARTMENT
THIS PLAN MEETS THE APPLICABLE STANDARDS IF THE PLANNING AND DEVELOPMENT DEPARTMENT

M. MARGO WHEELER, AICP, CURRENT PLANNING MANAGER — DATE

"APPROVAL OF THESE PLANS IS LIMITED TO THOSE IMPROVEMENTS CONSTRUCTED IN THE DEDICATED RIGHTS-OF-WAY AND / OR DEDICATED EASEMENTS. THIS APPROVAL DOES NOT AUTHORIZE THE CONSTRUCTION OF ANY IMPROVEMENTS THAT DEVIATE FROM ADOPTED STANDARDS AND / OR SPECIFICATIONS, EXCEPT THOSE SPECIFICALLY LISTED UNDER DEVIATIONS FROM STANDARD. THE ENGINEER SHALL RESOLVE ANY DEVIATION OTHER THAN THOSE LISTED IN DEVIATIONS FROM STANDARDS IN FAVOR OF THE UNIFORM STANDARD DRAWINGS AND SPECIFICATIONS CLARK COUNTY AREA NEVADA".

CHARLES KAJKOWSKI, Jr.; PE #4784 — DATE
CITY ENGINEER
CITY OF LAS VEGAS, NEVADA

SUMMERLIN DESIGN REVIEW COMMITTEE

By: _____ DATE
GERALD ROBBINS
Title: VICE PRESIDENT, DETAIL PLANNING

NEVADA POWER COMPANY DISCLAIMER

NOTE:
EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATIONS.

CALL BEFORE YOU DIG: 1(800)227-2600

NEVADA POWER Co. — REVIEWED BY — DATE

LAS VEGAS VALLEY WATER DISTRICT — DATE
SHEETS (1, 2, 4, 10, 13, 17, & 18)

CLV FIRE DEPARTMENT — DATE

COX COMMUNICATIONS LAS VEGAS, INC. — DATE

SPRINT — DATE

SOUTHWEST GAS CORP. — DATE

SHEET 1 OF 20
CLV DRAWING NO. _____

STATE OF NEVADA — REGISTERED PROFESSIONAL ENGINEER — SUMMIT W. MARKHAM — No. 10189 — CIVIL — DATE: 1-A-05

REV	DATE	DESCRIPTION	DATE	AGEN.	APP.	DATE	CONV.	APP.

DESIGN: BE/CPF
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CHECK: SWM
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 01-04-05
PLOT TIME: 07:37:06

NOTE: ##/##/## ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD. * LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 * FAX: (702) 804-2299

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ISSUE DATE: ##/##/##

THE HOWARD HUGHES CORPORATION
SUMMERLIN VILLAGE 24 PARCEL B - SHADOW POINT - UNIT 1
COVER SHEET

DRAWING 1
1 OF 20 SHTS

JOB NO. 62024.60

pb24c0.dwg 4/2004 web

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. 0368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

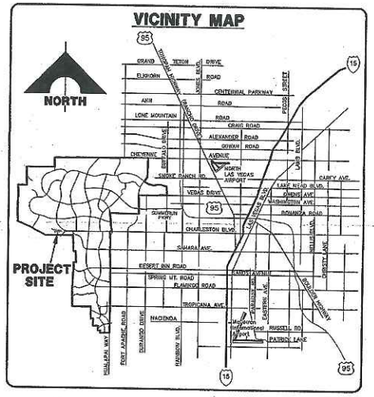
BASIS OF BEARINGS

NORTH 05°59'55" WEST, BEING THE BEARING OF THE WEST LINE OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA.

Avoid cutting underground utility lines. It's costly.
Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE (USA)

Avoid hitting overhead power lines. It's costly.
CALL BEFORE YOU DO OVERHEAD
CALL 1-702-227-2929

VICINITY MAP



NOTE

THIS SET OF DRAWINGS IS BASED UPON NAVD 88 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

LEGEND AND ABBREVIATIONS

- REVISION NUMBER
- EXISTING FEATURES
- FUTURE IMPROVEMENTS
- PROPERTY LINE/LANDSCAPE LINE
- CENTERLINE
- 2975 — EXISTING CONTOUR
- 60.50 TC — SPOT ELEVATION
- [60.50] TC — FUTURE SPOT ELEVATION
- 60.50 TC — GRADE BREAK ELEVATION
- PEDESTRIAN POLE
- STREET LIGHT (STLT)
- TRAFFIC SIGNAL POLE WITH STREET LIGHT
- EXISTING FIRE HYDRANT
- FIRE HYDRANT
- EDGE OF PAVEMENT
- RETAINING WALL (SEE GRADING PLAN)
- SIDEWALK RAMP (4/R)
- CG — 8" CROSS GUTTER
- SWV — SEWER BACK WATER VALVE
- 0" LIP DRIVEWAY

STREET QUANTITIES (PUBLIC)

STREETS		
2" A.C. PAVEMENT	11,855	S.Y.
4" TYPE II BASE	1318	C.Y.
5" TYPE II BASE	198	C.Y.
6" TYPE II BASE	482	C.Y.
6" TYPE "L" G & G	8,217	L.F.
TYPE "A" CURBS	220	L.F.
CONCRETE VALLEY GUTTER	1,524	S.F.
4 INCH CONCRETE SIDEWALK	12,778	S.F.
STREET LIGHTS		
SINGLE ARM ST. LT.	23	EA.
CONDUIT	3200	L.F.
IRRIGATION		
IRRIGATION SLEEVES	390	L.F.
5/8" METER W/ RPPA	0	E.A.
3/4" METER W/ RPPA	1	E.A.

LEGEND & ABBREVIATION

- (1) DETAIL DRAWING NUMBER
- (1/-) DRAWING NUMBER FOR DETAIL DRAWN ON SAME SHEET
- (1/7) DRAWING NUMBER FOR DETAIL WITH REFERENCE TO THE SHEET IT IS DRAWN ON
- (D1,D2/SIS) DRAWING NUMBER(S) FOR DETAIL(S) PER SUMMERLIN IMPROVEMENTS STANDARDS, OR PER STANDARDS IN ABBREVIATION TABLE
- (1/1) INDICATES CONSTRUCTION NOTE
- (A/1) INDICATES REMOVAL NOTE
- (1) INDICATES CURVE NUMBER
- INDICATES SEWER MANHOLE IN PROFILE
- INDICATES STORM DRAIN MANHOLE IN PROFILE
- (60.5) TC — EXIST. SPOT ELEVATION
- END PIPE & PLUG
- CONCRETE ENCASEMENT
- EXISTING CALICHE BOULDERS
- EXISTING ROUGH GRADING

EMBANKMENT

- TOP — PROPOSED
- BOTTOM — BY SEPARATE CONTRACT
- EXISTING

ABBREVIATION

- I = IMPROVEMENTS
- W = WATER
- S = SEWER
- SD = STORM DRAIN
- SL = STREET LIGHTING
- SIG = TRAFFIC SIGNAL
- SMH = SEWER MANHOLE
- SDMH = STORM DRAIN MANHOLE
- SIS = SUMMERLIN IMPROVEMENT STANDARDS
- CLV = CITY OF LAS VEGAS
- LVVWD = LAS VEGAS VALLEY WATER DISTRICT
- NDOT = NEVADA DEPT. OF TRANSPORTATION
- THHC = THE HOWARD HUGHES CORPORATION
- UDS = UNIFORM DESIGN AND CONSTRUCTION STANDARDS (UDACS)
- USD = UNIFORM STANDARD DWGS. (CLARK COUNTY)
- CCWRD = CLARK COUNTY WATER RECLAIMATION DISTRICT

NOTE: LEGEND & ABBREVIATIONS IN THE "SUMMERLIN IMPROVEMENT STANDARDS", LATEST EDITION, WILL BE UTILIZED FOR ANY LEGEND & ABBREVIATION REQUIRED WHICH ARE NOT SHOWN.

CONSTRUCTION NOTES

ROADWAY

- (1/R) INSTALL A.C. PAVEMENT PER TYPICAL STREET SECTIONS, SEE SHEET 9.
- (2/R) INSTALL 6" "L" TYPE CURB & GUTTER — (S-67/SIS)
- (3/R) VERIFY LOCATION AND ELEVATION OF EXISTING ROADWAY IMPROVEMENT AND MATCH TO EXISTING CONDITION.
- (4/R) INSTALL "A" TYPE ISLAND CURB — (S-30/SIS)
- (5/R) INSTALL 8' CROSS GUTTER — (S-64/SIS)
- (6/R) INSTALL HANDICAP RAMP CURB DEPRESSION SEE PLAN AND PROFILES FOR RAMP DATA — (2/9)
- (7/R) CONSTRUCT 4' CONC. SIDEWALK SEE SECTIONS ON SHEET 9 — (S-72/SIS)
- (8/R) CONSTRUCT WALKWAY UNDERDRAIN — (D-37/SIS)
- (9/R) INSTALL HANDICAP RAMP CURB DEPRESSION SEE PLAN AND PROFILES FOR RAMP DATA — (235/USD)
- (10/R) CONSTRUCT RESIDENTIAL DRIVEWAY — (223/USD) (5/9)

WATER

- (1/W) INSTALL 3/4" WATER METER
- (2/W) INSTALL 8"X8" TEE
- (3/W) INSTALL 16"X8" REDUCER
- (4/W) INSTALL 12"X6" REDUCER
- (5/W) INSTALL 5° BEND
- (6/W) INSTALL 11-1/4° BEND
- (7/W) INSTALL 22-1/2° BEND
- (8/W) INSTALL 45° BEND
- (9/W) INSTALL 90° BEND
- (10/W) INSTALL CAP W/ 2" BLOW-OFF ASSEMBLY — (4/405)
- (11/W) INSTALL FIRE HYDRANT ASSEMBLY — (7/405)
- (12/W) INSTALL 12" GATE VALVE & BOX — (8/405)
- (13/W) INSTALL 6" GATE VALVE & BOX — (10/405)
- (14/W) REMOVE CAP & CONNECT TO EX WATER LINE (CONTRACTOR TO VERIFY SIZE, INVERT, AND LOCATION OF EX WATER LINE PRIOR TO CONSTRUCTION).
- (15/W) INSTALL 8" GATE VALVE & BOX — (8/405)
- (16/W) INSTALL 12"X8" TEE
- (17/W) INSTALL 8"x6" REDUCER
- (18/W) INSTALL 3/4" IRRIGATION METER W/ 1" RIPPA — (10/405) (14/405)

SEWER

- (20/S) INSTALL 48" DIA. SEWER MANHOLE — (S0 1-8/CCWRD)
- (21/S) INSTALL ENDCAP AND MARKER — (S0-12/CCWRD)
- (22/S) REMOVE PLUG & CONNECT TO EX SEWER LINE (CONTRACTOR TO VERIFY SIZE, INVERT, AND LOCATION OF EX SEWER LINE PRIOR TO CONSTRUCTION).
- (23/S) INSTALL 4" SEWER LATERAL & MARKER — (S0-12/CCWRD) (S0-17/CCWRD)

STORM DRAIN

- (40/SD) INSTALL TYPE I 60" ACCESS STORM DRAIN MANHOLE — (403/USD)
- (41/SD) INSTALL TYPE III STORM DRAIN MANHOLE — (406/USD)
- (42/SD) INSTALL TYPE II STORM DRAIN MANHOLE — (405/USD)
- (43/SD) INSTALL MODIFIED TYPE "C" DROP INLET — (1/9)
- (44/SD) INSTALL TEMPORARY PLUG
- (45/SD) REMOVE PLUG & CONNECT TO EX STORM DRAIN LINE (CONTRACTOR TO VERIFY SIZE, INVERT, AND LOCATION OF EX STORM DRAIN LINE PRIOR TO CONSTRUCTION)

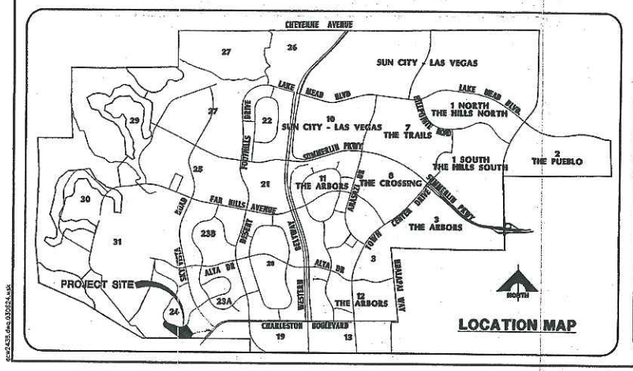
IRRIGATION

- (40/IR) BANK "A": 2-4" SCHD. 40 PVC — (10/9)
- (40/IR) 1-6" SCHD. 40 PVC — (10/9)

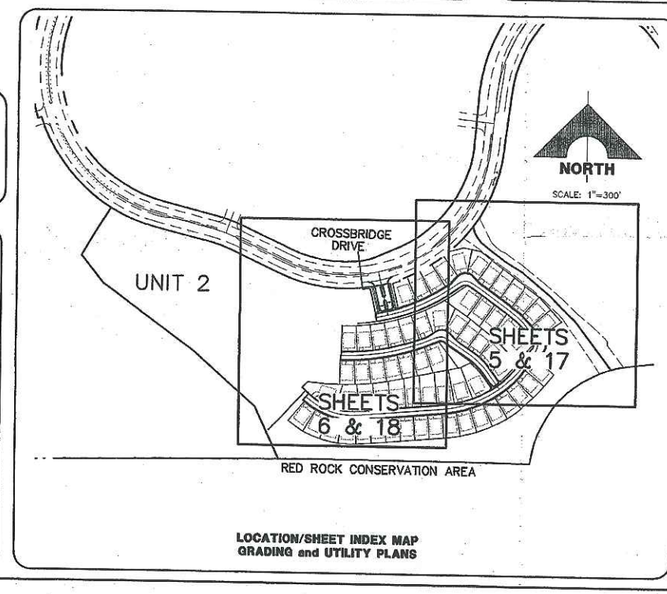
DEVIATIONS FROM STANDARDS

1. CENTERLINE RADII LESS THAN 300 FEET.
2. INTERSECTION KNUCKLES NOT STANDARD.
3. NO TANGENT BETWEEN REVERSE CURVES.

DEVIATIONS APPROVED BY CLV MONTH ?, 2004.



LOCATION MAP



LOCATION/SHEET INDEX MAP
GRADING and UTILITY PLANS

INDEX OF DRAWINGS

1. COVER SHEET
2. PROJECT DATA SHEET I
3. PROJECT DATA SHEET II
4. MASTER UTILITY PLAN
5. GRADING PLAN I
6. GRADING PLAN II
7. DETAILS I
8. DETAILS II
9. DETAILS III
10. KNOLL MANOR PLACE PLAN and PROFILE
11. ASPEN TREE AVENUE PLAN and PROFILE
12. LEAF FOREST PLACE PLAN and PROFILE
13. RUSTLING ELM AVENUE PLAN and PROFILE I
14. RUSTLING ELM AVENUE PLAN and PROFILE II
15. SUGARBERRY PLACE PLAN and PROFILE
16. LOFTY PINE AVENUE PLAN and PROFILE
17. UTILITY PLAN I
18. UTILITY PLAN II
19. STREETLIGHT and TRAFFIC CONTROL PLAN I
20. STREETLIGHT and TRAFFIC CONTROL PLAN II

LEGAL DESCRIPTION

LOT 2 OF BLOCK A OF "SUMMERLIN VILLAGE 24 UNIT NO. 1" ON FILE IN BOOK , PAGE OF PLATS IN THE COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA, LYING WITHIN THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST, THE NORTH HALF (N 1/2) OF SECTION 3 AND THE NORTHEAST QUARTER (NE 1/4) OF SECTION 4, TOWNSHIP 21 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA.

APPROVAL:

LAS VEGAS VALLEY WATER DISTRICT — DATE

CLV DRAWING NO.

STATE OF NEVADA — No. 10178 — GREGORY C. WALLACE — REGISTERED PROFESSIONAL ENGINEER

DATE: 1-4-05

REV.	DATE	DESCRIPTION	DATE AGEN. APP.	DATE CCW APP.
		ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION		

DESIGN: BE/DFF
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CHECK: SWH
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 01-04-05
PLOT TIME: 07:27:24

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299

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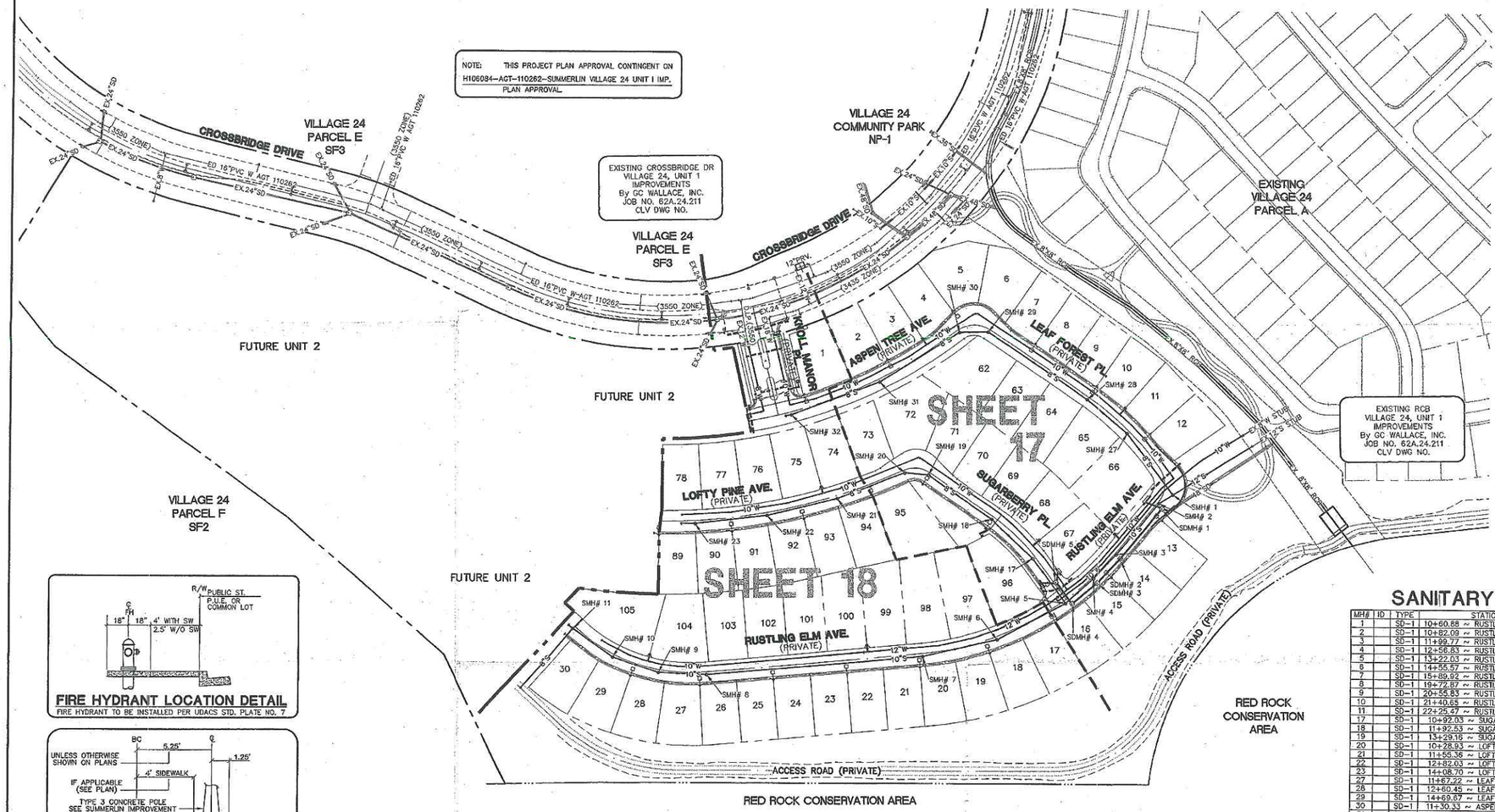
mondaspr

ISSUE DATE: 1-4-05

THE HOWARD HUGHES CORPORATION
SUMMERLIN VILLAGE 24 PARCEL B - SHADOW POINT - UNIT I
PROJECT DATA SHEET I

DRAWING 2
2 OF 20 SHTS

JOB NO. 62024.810



NOTE

INSTALL PIPELINE MARKER BALLS IN TRENCH ABOVE EACH HORIZONTAL ELBOW FITTING, PER UDACS PLATE No. 27.

FIRE FLOW CALCULATIONS

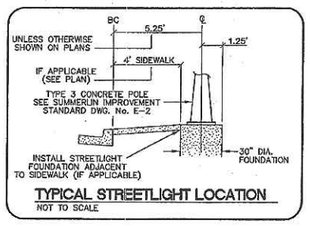
– FIRE FLOW REQUIREMENT IS 1500 GALLONS PER MINUTE AT 20 psi.	
– SQUARE FOOTAGE	< 3600 SF
– LARGEST AREA BETWEEN 4–HOUR AREA SEPARATION WALLS	N/A
– BUILDING HEIGHT	35 FEET MAX.
– NUMBER OF STORIES	2
– TYPE OF CONSTRUCTION	V–NR
– OCCUPANCY	SINGLE FAMILY
– FULL AUTOMATIC FIRE SPRINKLER SYSTEM	NO

SANITARY SEWER MANHOLE SCHEDULE

MH#	ID	TYPE	STATION	OFFSET	RIM EL	N INV EL	S INV EL	E INV EL	W INV EL	COMMENTS
1		SD–1	10+60.88 ~ RUSTLING ELM AVE.	17.11' LT	3281.6±	3266.27	–	3265.94	3266.27	
2		SD–1	10+82.09 ~ RUSTLING ELM AVE.	2.50' LT	3281.5±	–	–	3267.57	3267.82	
3		SD–1	11+99.77 ~ RUSTLING ELM AVE.	2.50' LT	3283.2±	–	–	3270.18	3270.48	
4		SD–1	12+56.83 ~ RUSTLING ELM AVE.	5.48' LT	3284.3±	–	–	3271.51	3272.11	
5		SD–1	13+22.03 ~ RUSTLING ELM AVE.	5.00' LT	3285.6±	3273.99	–	3273.65	3273.99	
6		SD–1	14+55.57 ~ RUSTLING ELM AVE.	5.00' LT	3288.3±	–	–	3279.92	3280.21	
7		SD–1	15+89.92 ~ RUSTLING ELM AVE.	5.00' LT	3290.9±	–	–	3282.91	3283.11	
8		SD–1	19+72.87 ~ RUSTLING ELM AVE.	5.00' LT	3301.9±	–	–	3291.16	3291.36	
9		SD–1	20+55.83 ~ RUSTLING ELM AVE.	5.00' LT	3307.4±	–	–	3298.40	3296.60	
10		SD–1	21+40.65 ~ RUSTLING ELM AVE.	5.00' LT	3313.0±	–	–	3302.53	3302.73	
11		SD–1	22+25.47 ~ RUSTLING ELM AVE.	5.00' LT	3318.6±	–	–	3308.66	3308.85	
17		SD–1	10+92.03 ~ SUGARBERRY PL.	5.00' LT	3288.2±	3281.48	3281.12	–	–	
18		SD–1	11+92.53 ~ SUGARBERRY PL.	5.00' LT	3292.5±	3285.73	3285.53	–	–	
19		SD–1	13+29.16 ~ SUGARBERRY PL.	5.00' LT	3298.3±	3291.67	3291.47	–	–	
20		SD–1	10+28.93 ~ LOFTY PINE AVE.	5.00' LT	3300.5±	–	–	3292.95	3293.15	
21		SD–1	11+56.36 ~ LOFTY PINE AVE.	5.00' LT	3305.8±	–	–	3297.59	3297.79	
22		SD–1	12+82.03 ~ LOFTY PINE AVE.	5.00' LT	3311.3±	–	–	3302.88	3303.08	
23		SD–1	14+08.70 ~ LOFTY PINE AVE.	5.00' LT	3316.7±	–	–	3308.17	3308.37	
27		SD–1	11+67.22 ~ LEAF FOREST PL.	5.00' LT	3284.8±	3273.47	3273.27	–	–	
28		SD–1	12+60.45 ~ LEAF FOREST PL.	5.00' LT	3289.6±	3279.20	3279.00	–	–	
29		SD–1	14+69.67 ~ LEAF FOREST PL.	5.00' LT	3301.1±	–	3291.34	–	3291.54	
30		SD–1	11+30.33 ~ ASPEN TREE AVE.	5.00' LT	3303.8±	–	–	3294.19	3294.39	
31		SD–1	12+95.52 ~ ASPEN TREE AVE.	5.00' LT	3309.8±	–	–	3300.17	3302.17	
32		SD–1	14+61.49 ~ ASPEN TREE AVE.	5.00' LT	3315.7±	–	–	3308.01	3308.21	

FIRE HYDRANT LOCATION DETAIL

FIRE HYDRANT TO BE INSTALLED PER UDACS STD. PLATE NO. 7



TYPICAL STREETLIGHT LOCATION

NOT TO SCALE

NOTE

THIS SET OF DRAWINGS IS BASED UPON NAVD 88 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

THIS PLAN IS FOR OVER–ALL PROJECT REVIEW AND INFORMATIONAL PURPOSES ONLY. SEE INDIVIDUAL PLAN AND PROFILE SHEETS, CONSTRUCTION DETAILS, AND LATERAL PROFILES FOR CONSTRUCTION INFORMATION.

NOTES TO CONTRACTOR

THE DISTRICT CANNOT GUARANTEE A WATER–TIGHT SHUTDOWN WHERE CONNECTIONS OR REPAIRS TO EXISTING FACILITIES ARE REQUIRED. THE CONTRACTOR SHALL ENSURE ALL LABOR AND EQUIPMENT IS AVAILABLE TO REMOVE FUGITIVE WATER WHICH MAY IMPEDE CONSTRUCTION AT ALL TIMES. COORDINATION WITH INSPECTION DIVISION MUST TAKE PLACE PRIOR TO ANY TRIAL SHUT DOWN.
CONTRACTOR TO INSTALL TEMPORARY SERVICE TO ENSURE PROPER SHUTDOWN IN THE EVENT NO OTHER APPURTENANCES ARE AVAILABLE.

WATER MAIN JOINT DEFLECTION (PVC, 4"–24")
PVC PIPE SHALL BE DEFLECTED AT THE JOINT ONLY. THE MAXIMUM ALLOWABLE DEFLECTION SHALL BE ONE (1) DEGREE PER JOINT WITH A MAXIMUM RADIUS OF CURVATURE OF 1,150 FEET, PER UDACS 2.06.01 AND 2.06.02.
FOR CHANGES IN DIRECTION EXCEEDING THE MAXIMUM ALLOWABLE JOINT DEFLECTION, FITTINGS SHALL BE USED.

INSTALL PIPELINE MARKER BALLS IN TRENCH ABOVE EACH HORIZONTAL ELBOW FITTING PER UDACS PLATE NO. 27.

CONDITIONAL APPROVAL OF VALVED OUTLET (6" & LARGER)

THE WATER PLANS SHOW ONE OR MORE VALVED OUTLETS EXTENDING OUT OF PAVED AREAS. INSTALLATION OF THESE OUTLETS IS ACCEPTABLE; HOWEVER, IF THE OUTLETS ARE INCORRECTLY LOCATED OR NOT USED FOR ANY REASON WHEN THE PROPERTY IS ACTUALLY DEVELOPED, THE DEVELOPER SHALL ABANDON THE OUTLETS AT THE CONNECTION TO THE ACTIVE MAIN IN ACCORDANCE WITH THE AGENCY'S STANDARDS AND AT THE DEVELOPER'S EXPENSE. APPROVAL OF THE VALVED OUTLET DOES NOT PROVIDE OR IMPLY A WATER COMMITMENT.

LAS VEGAS VALLEY WATER DISTRICT (LVVWD) STANDARD NOTES

LVVWD PROJECT #_____

1. NO WORK SHALL BEGIN UNTIL THE WATER PLANS HAVE BEEN APPROVED FOR CONSTRUCTION BY THE LVVWD. FOLLOWING WATER PLAN APPROVAL, NOTICE SHALL BE GIVEN TO THE LVVWD COMMUNICATION SUPPORT CENTER (258–7171) TWO (2) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION. FOR FUTURE INSPECTIONS, NOTICE MUST BE GIVEN BY 2:00 P.M. THE BUSINESS DAY PRIOR TO THE REQUESTED LVVWD INSPECTION. WHEN REQUESTING INSPECTIONS, PLEASE REFER TO THE PROJECT # IDENTIFIED ABOVE.
2. ALL WORK SHALL CONFORM TO LVVWD STANDARD PLATES, DRAWINGS, AND SPECIFICATIONS, AND TO THE 2003 EDITION OF THE UNIFORM DESIGN AND CONSTRUCTION STANDARDS FOR POTABLE WATER SYSTEMS (UDACS).
3. ALL WORK, EXCEPT AS MODIFIED BY THESE PLANS OR BY NOTE 2 ABOVE, SHALL BE DONE IN ACCORDANCE WITH THE MOST RECENT DRAFT OR EDITION OF THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFFSITE IMPROVEMENT, CLARK COUNTY AREA.
4. A SINGLE PIPE MATERIAL SHALL BE USED THROUGHOUT THE PROJECT UNLESS OTHERWISE APPROVED BY THE LVVWD. BE TYPE K COPPER TUBING WITH LVVWD APPROVED SERVICE SADDLES.
5. ALL WATER METER BOXES SHALL BE LOCATED OUTSIDE OF DRIVEWAY AREAS.
6. ALL VALVES SHALL BE LOCATED OUTSIDE OF DRIVEWAYS, VALLEY AND CURB GUTTERS.
7. ALL WATER AND STORM DRAIN OR SANITARY SEWER CROSSINGS SHALL CONFORM TO SECTION 2.19 OF THE 2003 EDITION OF THE UDACS.
8. ALL WATER FACILITIES SHALL BE FILLED, DISINFECTED, PRESSURE TESTED, FLUSHED, FILLED, AND AN ACCEPTABLE WATER SAMPLE OBTAINED, PRIOR TO CONNECTION TO THE LVVWD DISTRIBUTION SYSTEM.
9. THE CONTRACTOR MUST OBTAIN ALL METERS TWO (2) INCHES AND SMALLER FROM LVVWD CENTRAL STORES. TELEPHONE 258–3152 OR 258–3802. TWO WORKING DAYS PRIOR TO METER PICKUP.
10. ANY INTERRUPTION OF SERVICE MUST BE APPROVED BY THE LVVWD INSPECTION DIVISION PRIOR TO SHUTDOWN. PROPER WRITTEN NOTIFICATION MUST BE GIVEN TO ALL AFFECTED CUSTOMERS.
11. ALL WATER FACILITY CONSTRUCTION MATERIALS USED MUST BE AS LISTED ON THE LVVWD PRE–APPROVED MATERIALS AND MANUFACTURER'S LISTING FOR NEW FACILITIES, LATEST REVISION, OR SPECIFICALLY APPROVED ON THESE PLANS.
12. TELEPHONE "CALL BEFORE YOU DIG" AT 1–800–227–2600.

ESTIMATED STORM DRAIN QUANTITIES

QUANTITIES ARE ESTIMATES ONLY. CONTRACTOR IS TO VERIFY DURING BIDDING PROCESS.

24" RCP	314	LF
30" RCP	28	LF
36" RCP	8	LF
48" RCP	194	LF
MANHOLE – 60" TYPE I	4	EA
MANHOLE – 60" TYPE III	1	EA
MOD. "CM" DROP INLET (8.5')	2	EA
MOD. "CM" DROP INLET (14.5')	2	EA

ESTIMATED SEWER QUANTITIES

QUANTITIES ARE ESTIMATES ONLY. CONTRACTOR IS TO VERIFY DURING BIDDING PROCESS.

8" SEWER SDR–35 PVC (PUBLIC)	1760	LF
10" SEWER SDR–35 PVC (PUBLIC)	1179	LF
12" SEWER SDR–35 PVC (PUBLIC)	164	LF
48" STANDARD MANHOLES (PUBLIC)	24	EA
REINFORCED CONC. ENCASEMENT	0	LF

SEWER AVERAGE DAILY FLOWS =
105 LOTS X 250 GPD/ERU = 26,250
(0.026 MGPD)

SEWER PEAK FLOWS = 0.091 GPD

ESTIMATED WATER QUANTITIES

QUANTITIES ARE ESTIMATES ONLY. CONTRACTOR IS TO VERIFY DURING BIDDING PROCESS.

8" PVC WATER	142	LF
10" PVC WATER	2947	LF
12" PVC WATER	350	LF
FIRE HYDRANT ASSEMBLY	7	EA
2" MANUAL BLOW–OFF ASSEMBLY	3	EA
8" GATE VALVE	1	EA
10" GATE VALVE	6	EA
12" GATE VALVE	3	EA
10" x 10" TEE	1	EA
10" x 12" TEE	1	EA
10" x 8" REDUCER	1	EA
12" x 10" REDUCER	2	EA
16" x 10" REDUCER	1	EA
8" x 12" REDUCER	1	EA
8" 90° BEND	1	EA
8" 45° BEND	0	EA
8" 22 1/2° BEND	0	EA
8" 11 1/4° BEND	0	EA
8" 5° BEND	0	EA
10" 90° BEND	3	EA
10" 45° BEND	2	EA
10" 22 1/2° BEND	1	EA
10" 11 1/4° BEND	3	EA
10" 5° BEND	23	EA
12" 90° BEND	0	EA
12" 45° BEND	0	EA
12" 22 1/2° BEND	0	EA
12" 11 1/4° BEND	0	EA
12" 5° BEND	5	EA
3/4" DOMESTIC WATER METER	64	EA
3/4" IRRIGATION METER W/ 1" RPPA	1	EA
POWER PEDESTAL FOR IRRIGATION CONTROLLER	1	EA
4" C900 PVC SLEEVE	390	LF

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. 0368 3	U.S.C.&G. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 05°59'55" WEST BEING THE BEARING OF THE WEST LINE OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA.

Avoid cutting underground utility lines. It's costly.
Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE (USA)

Avoid hitting overhead power lines. It's costly.
CALL BEFORE YOU DO OVERHEAD
CALL 1–702–227–2929

APPROVED FOR CONSTRUCTION

CITY OF LAS VEGAS FIRE DEPARTMENT DATE

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE

CLV DRAWING NO._____

REGISTERED ENGINEER – STATE OF NEVADA – SONNY W. NEIGHBORS – No. 10018 – CIVIL – EXP. 12/31/2006 – PROFESSIONAL ENGINEER

DATE: 1-18-05

REV	DATE	DESCRIPTION	DATE	ASEN	APP	DATE	DCM	APP

DESIGN: BE/OFF
DRAWN: BE/AMDY
CHECK: SWN
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 01–07–05
PLOT TIME: 08:23:06

ISSUE DATE: 01/04/05 ISSUE FOR AGENCY REVIEW – NOT FOR CONSTRUCTION

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE (702) 804–2000 FAX (702) 804–2001

F:\V24\Parcel B\Phase 1\dwg\Vegs\V24sbc004.dwg

THE HOWARD HUGHES CORPORATION
SUMMERLIN VILLAGE 24 PARCEL B – SHADOW POINT – UNIT I
MASTER UTILITY PLAN

SHEET 4
4 OF 20 SHTS

JOB NO. 62024810

NOTE
CROSSBRIDGE DR. VILLAGE 24, UNIT 1 TO BE DEVELOPED PRIOR TO CONSTRUCTION.

EXISTING CROSSBRIDGE DR VILLAGE 24, UNIT 1 IMPROVEMENTS BY: G.C. WALLACE, INC. JOB NO. 624.24.21 CLV DWG NO.

VILLAGE 24 PARCEL E SF3

CROSSBRIDGE DRIVE

EXISTING VILLAGE 24 PARCEL A

EXISTING VILLAGE 24 PARCEL A

NOTE
ALL PRIVATE STREETS ARE P.U.E., PUBLIC SEWER EASEMENTS, AND PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED BY HOA.

ASPEN TREE AVE. (PRIVATE)

LEAF FOREST PL. (PRIVATE)

LOFTY PINE AVE. (PRIVATE)

SUGARBERRY PL. (PRIVATE)

RUSTLING ELM AVE. (PRIVATE)

SEE SHEET 6

70' SEWER & STORM DRAIN EASEMENT (TO BE PRIVATELY MAINTAINED)

COMMON LOT "K" AND DRAINAGE EASEMENT - TO BE PRIVATELY MAINTAINED

EXISTING RCB VILLAGE 24, UNIT 1 IMPROVEMENTS By: G.C. WALLACE, INC. JOB NO. 624.24.21 CLV DWG NO.

RED ROCK CONSERVATION AREA

NORTH

SCALE: -40 0 40 80 FEET

ESTIMATED STORM DRAIN QUANTITIES

QUANTITIES ARE ESTIMATES ONLY. CONTRACTOR IS TO VERIFY DURING BIDDING PROCESS.

24" RCP	314 LF
30" RCP	28 LF
36" RCP	8 LF
48" RCP	194 LF
MANHOLE – 60" TYPE I	4 EA
MANHOLE – 60" TYPE III	1 EA
MOD. "CM" DROP INLET (8.5')	2 EA
MOD. "CM" DROP INLET (14.5')	2 EA

ENGINEER'S EVALUATION OF GRADING QUANTITES

PLEASE NOTE THESE QUANTITIES ARE ESTIMATES ONLY. ACTUAL QUANTITIES MAY DIFFER FROM THE ESTIMATE DUE TO SOILS VARIATIONS IN THE FIELD. VOLUMES CALCULATED WITHOUT SHRINKAGE OR SUBSIDENCE FACTORS AND DO NOT INCLUDE OVEREXCAVATION REQUIRED FOR THE REMOVAL OF CAUICHE OR ANY OTHER UNDESIRABLE MATERIALS. REFER TO THE SOILS REPORT FOR THESE AREAS. ALSO NOT INCLUDED ARE QUANTITIES FOR ADDITIONAL DITCHES & BERMS NOT SHOWN THAT MAY BE REQUIRED BY THE ENGINEER.

COMPUTED CUT VOLUME: 106,657 cys
COMPUTED FILL VOLUME: 247,033 cys
IMPORT: 140,376 cys

DRAINAGE CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED DRAINAGE STUDY.

SONNY W. NEIGHBORS, PE NO. 10118 DATE

NOTE

THIS SET OF DRAWINGS IS BASED UPON NAVD 88 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. 8365 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.593 (METERS)

BASIS OF BEARINGS

NORTH 05°59'55" WEST, BEING THE BEARING OF THE WEST LINE OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA.

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CALL 1-702-227-2929

V-24 PARCEL E | V-24 PARCEL A | CROSSBRIDGE DRIVE | UNIT 2 | UNIT 1 | V-24 PARCEL F | SHEET 6 | SHEET 5 | RED ROCK RECREATION AREA

NORTH N.T.S.
SHEET INDEX MAP

CLV DRAWING NO.

STATE OF NEVADA — SONNY W. NEIGHBORS — No. 10118 — PROFESSIONAL ENGINEER

DESIGN: BE/DFF
DRAWN: BE/BB/ANDY
CHECK: SNN
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 01-07-05
PLOT TIME: 15:54:27
bestrada

DATE	AGEN	APP'D	DATE	CONV.	APP'D

REV.	DATE	DESCRIPTION
1	10-01-04	ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION
2	01-07-05	ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD., LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2001

F:\V24\Parcel B\Dgns\Dgns\V24pbc0205.dwg

THE HOWARD HUGHES CORPORATION
SUMMERLIN VILLAGE 24 PARCEL B - SHADOW POINT - UNIT I
GRADING PLAN I

JOB NO. 62024.810
DRAWING 5
5 OF 20 SHTS
ISSUE DATE: 01/07/05

NOTE
CROSSBRIDGE DR. VILLAGE 24, UNIT 1 TO BE DEVELOPED PRIOR TO CONSTRUCTION.

NOTE
ALL PRIVATE STREETS ARE P.U.E., PUBLIC SEWER EASEMENTS, AND PUBLIC DRAINAGE EASEMENTS TO BE PRIVATELY MAINTAINED BY HOA.

NOTE
CONTRACTOR TO INSTALL AND MAINTAIN 4"-6" RIPRAP AT THE END OF EACH STREET.

FUTURE VILLAGE 24 PARCEL B UNIT II

CROSSBRIDGE DRIVE

KNOLL MANOR PL. (PRIVATE)

ASPEN TREE AVE. (PRIVATE)

LEAF FOREST PL. (PRIVATE)

LOFTY PINE AVE. (PRIVATE)

SUGARBERRY PL. (PRIVATE)

RUSTLING ELM AVE. (PRIVATE)

COMMON LOT "K" AND DRAINAGE EASEMENT TO BE PRIVATELY MAINTAINED

COMMON LOT "J"

COMMON LOT "I"

SOLID GROUT 2-COURSES

DAYLIGHT LINE

CUTOFF WALL PER DETAIL NO.9

5'x37' RIPRAP PAD 6" THICKNESS = 1'

RED ROCK CONSERVATION AREA

RED ROCK CONSERVATION AREA

SEE SHEET 5

SEE SHEET 5

NORTH

SCALE: -40 0 40 80 FEET

ESTIMATED STORM DRAIN QUANTITIES

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24" RCP	314 LF
30" RCP	28 LF
36" RCP	8 LF
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MOD. "CM" DROP INLET (14.5')	2 EA

ENGINEER'S EVALUATION OF GRADING QUANTITES

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COMPUTED CUT VOLUME: 106,657 cys
COMPUTED FILL VOLUME: 247,033 cys
IMPORT: 140,376 cys

DRAINAGE CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED DRAINAGE STUDY.

SONNY W. NEIGHBORS, PE NO. 10118 DATE

NOTE

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BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. 0388 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 05°59'35" WEST, BEING THE BEARING OF THE WEST LINE OF SECTION 24, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA.

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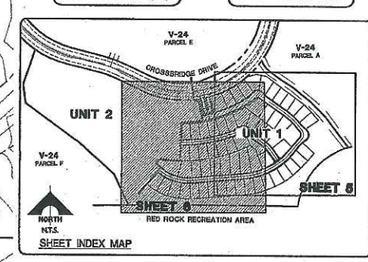


SHEET INDEX MAP

CLV DRAWING NO.

SONNY W. NEIGHBORS — NEVADA — No. 10118 — PROFESSIONAL ENGINEER — STATE OF NEVADA — Dec. 12/31/2006 — CIVIL

NO.	DESCRIPTION	DATE	APP'D
1	ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION	01/07/05	

DESIGN: BE/DFF
DRAWN: BE/BB/MDY
CHECK: SWN
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 01-07-05
PLOT TIME: 16:55:54
F:\02\Parcel B\Phase 1\dwg\proj\02ebc005.dwg

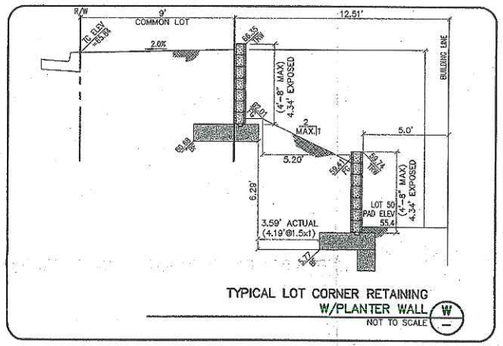
G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
PHONE: (702) 804-8000 FAX: (702) 804-8008 Jeatrade

ISSUE DATE 01/07/05

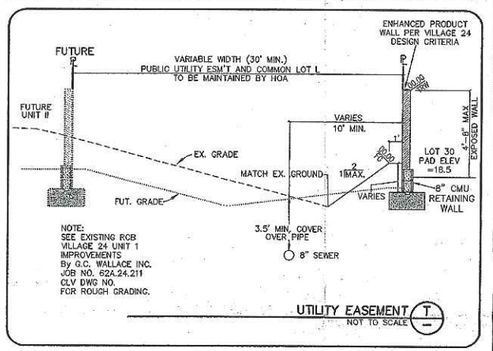
THE HOWARD HUGHES CORPORATION
SUMMERLIN VILLAGE 24 PARCEL B - SHADOW POINT - UNIT I
GRADING PLAN II

DRAWING 6
6 OF 20 SHTS

JOB NO. 62024.810

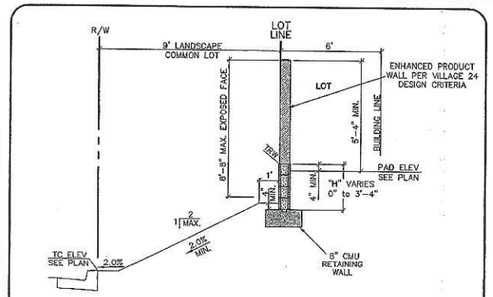


TYPICAL LOT CORNER RETAINING W/PLANTER WALL (W)
NOT TO SCALE

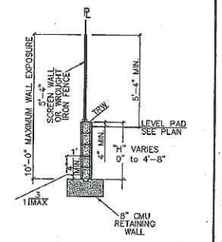


UTILITY EASEMENT (T)
NOT TO SCALE

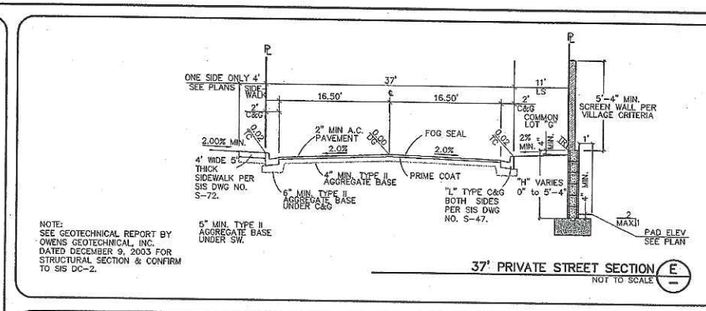
TYPICAL CORNER LOT GRADING with RETAINING WALL (S)
NOT TO SCALE



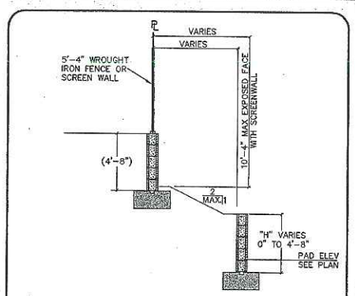
TYPICAL CORNER LOT GRADING with RETAINING (P)
NOT TO SCALE



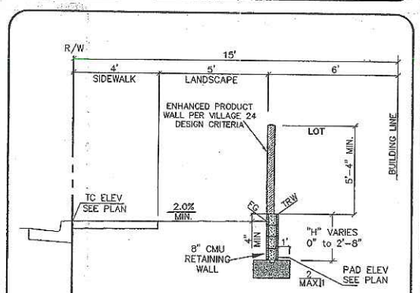
PERIMETER RETAINING WALL (K)
NOT TO SCALE



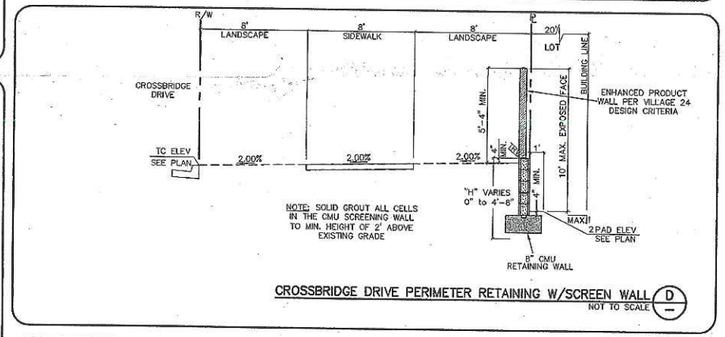
37' PRIVATE STREET SECTION (E)
NOT TO SCALE



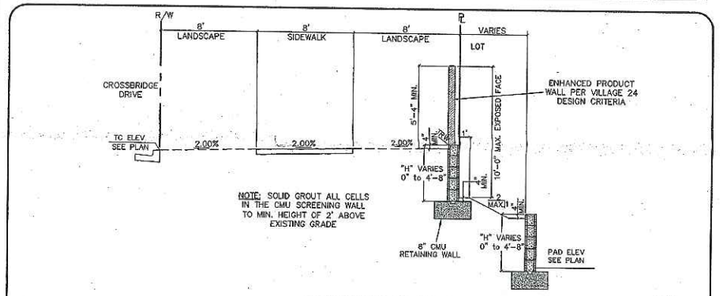
PERIMETER RETAINING WALLS with PLANTERS (N)
NOT TO SCALE



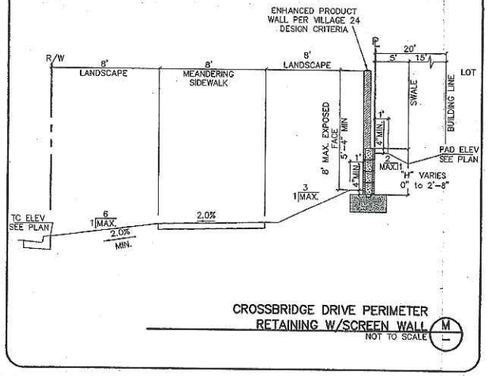
TYPICAL CORNER LOT GRADING with RETAINING WALL (J)
NOT TO SCALE



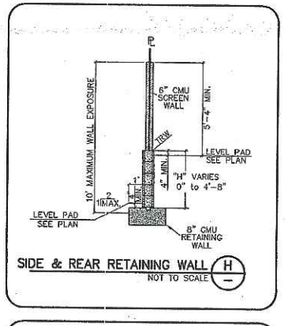
CROSSBRIDGE DRIVE PERIMETER RETAINING W/SCREEN WALL (D)
NOT TO SCALE



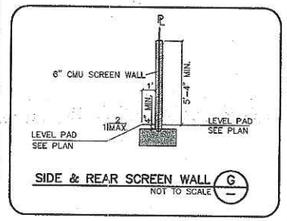
CROSSBRIDGE DRIVE PERIMETER RETAINING W/PLANTER (C)
NOT TO SCALE



CROSSBRIDGE DRIVE PERIMETER RETAINING W/SCREEN WALL (M)
NOT TO SCALE

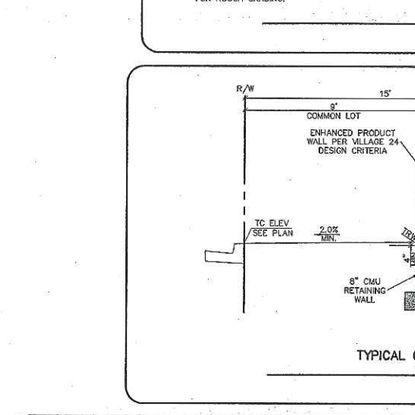


SIDE & REAR RETAINING WALL (H)
NOT TO SCALE

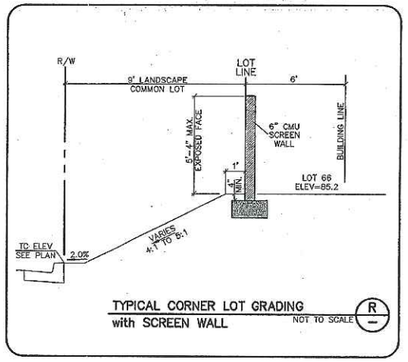


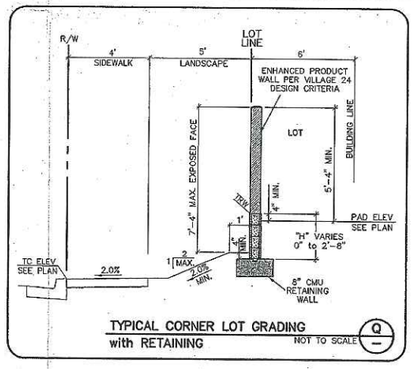
SIDE & REAR SCREEN WALL (G)
NOT TO SCALE

37' TYPICAL PRIVATE STREET SECTION (B)
NOT TO SCALE

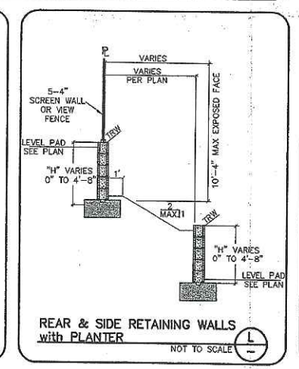


TYPICAL CORNER LOT GRADING with SCREEN WALL (R)
NOT TO SCALE

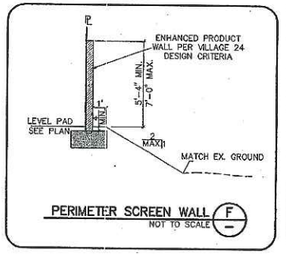




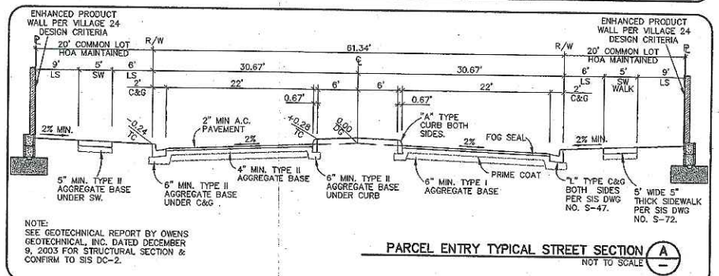
TYPICAL CORNER LOT GRADING with RETAINING (Q)
NOT TO SCALE



REAR & SIDE RETAINING WALLS with PLANTER (L)
NOT TO SCALE



PERIMETER SCREEN WALL (F)
NOT TO SCALE



PARCEL ENTRY TYPICAL STREET SECTION (A)
NOT TO SCALE

CLV DRAWING NO.

ENGINEER - STATE OF NEVADA
SONNY W. NEIGHBORS
No. 10118
CIVIL
EXPIRES 12/31/2005
TRANSMISSION NOT VALID UNLESS SIGNED

DATE: 1-10-05

REV	DATE	DESCRIPTION	DATE	AGEN.	APP.	DATE	ENG.	APP.

DESIGN: BE/JDF
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ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 01-04-05
PLOT TIME: 10:28:42

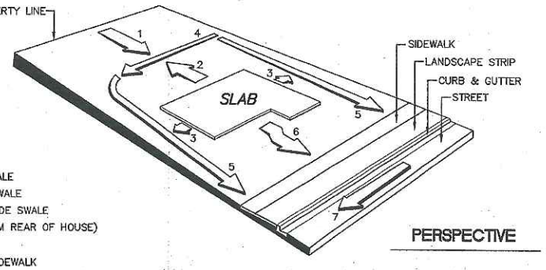
ISSUE DATE: 01/04/05 ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
bb/gga
F:\V24\Parcel B\Phase 1\dwg\tmsa\v24sbs007.dwg

THE HOWARD HUGHES CORPORATION
SUMMERLIN VILLAGE 24 PARCEL B - SHADOW POINT - UNIT I
DETAILS I

SHEET 7
7 OF 20 SHTS

JOB NO. 624.24.80



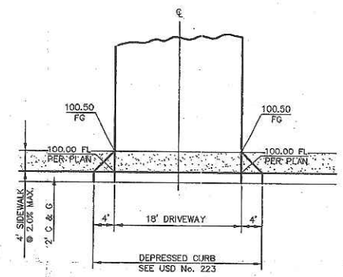
1. SLOPE FROM REAR TO SWALE
2. SLOPE FROM HOUSE TO SWALE
3. SLOPE FROM HOUSE TO SIDE SWALE
4. REAR SWALE (5' MIN. FROM REAR OF HOUSE)
5. SIDE SWALE
6. SLOPE FROM HOUSE TO SIDEWALK
7. SLOPE OF STREET

PERSPECTIVE

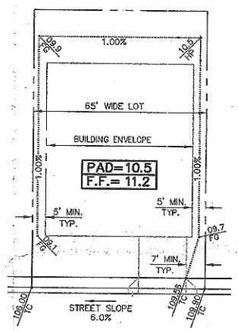
F.H.A. TYPE 'A' DRAINAGE

TYPICAL GRADING

TYPICAL GRADING (9) NOT TO SCALE



DRIVE APRON DETAIL (5) NOT TO SCALE



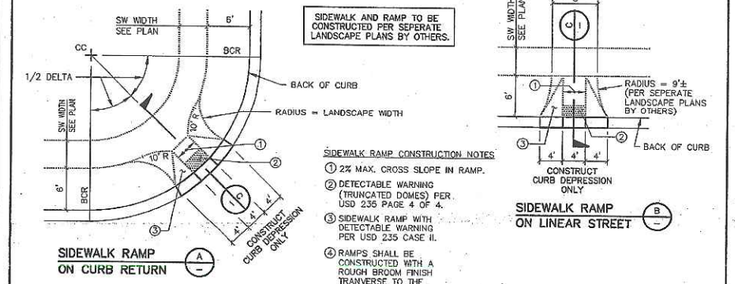
NOTE: SEE GRADING PLAN FOR RETAINING WALL LOCATIONS.

TYPICAL LOT GRADING with SIDEWALK (4) NOT TO SCALE



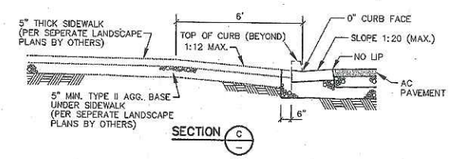
NOTE: SEE GRADING PLAN FOR RETAINING WALL LOCATIONS.

TYPICAL LOT GRADING without SIDEWALK (3) NOT TO SCALE



SIDEWALK RAMP ON CURB RETURN (A)

SIDEWALK RAMP ON LINEAR STREET (B)



ENTRY CURB DEPRESSION DETAIL FOR FUTURE SIDEWALK RAMP (2) NOT TO SCALE



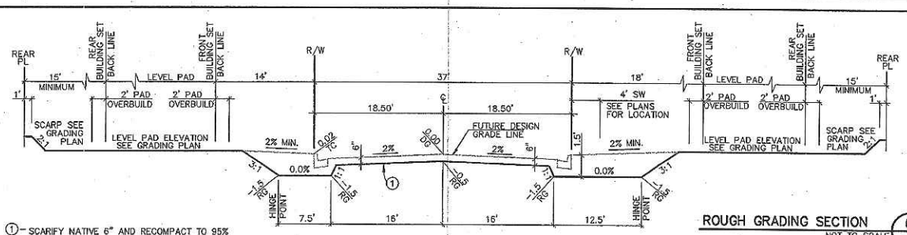
NOTES:
1. CONTRACTOR TO EXTEND SLEEVES 1' (12") BEHIND BACK OF CURB, OR 1' (12") BEHIND GUTTER OF ROUNDABOUT, TYPICAL.
2. IRRIGATION SLEEVES MUST BE INSTALLED PER SIS DWG NO. U-18.

IRRIGATION SLEEVES – BANK "A" (10) NOT TO SCALE



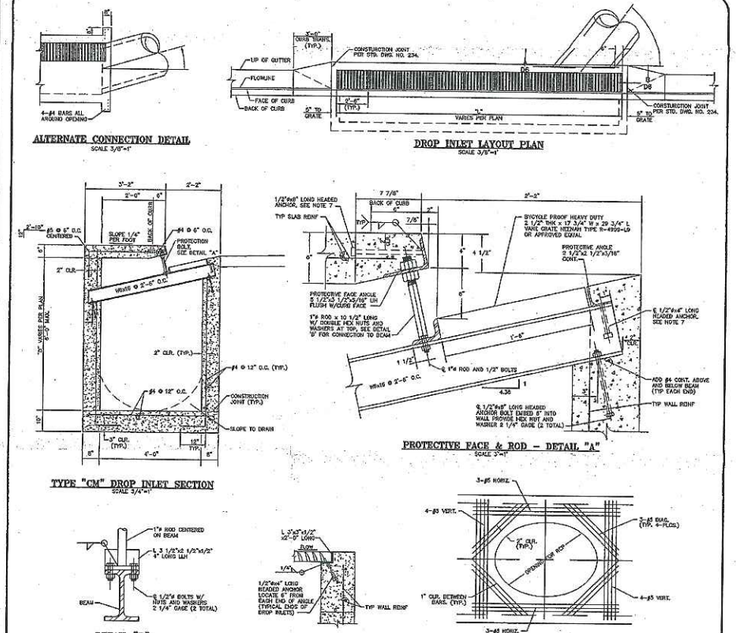
NOTES
1. CONCRETE ENCASEMENT TO EXTEND 10' PAST OUTSIDE OF WATER PIPE WHERE APPLICABLE.
2. FOR ADDITIONAL DETAIL INFORMATION, REFER TO C.C.W.R.D. "PIPE BEDDING METHODS," STANDARD NO. 50-11.
3. SEE PLAN FOR LOCATION AND LENGTH.

REINFORCED CONCRETE ENCASEMENT (7) NOT TO SCALE



① – SCARIFY NATIVE 6" AND RECOMPACT TO 95%

ROUGH GRADING SECTION (6) NOT TO SCALE



MODIFIED TYPE "CM" DROP INLET (1) NOT TO SCALE

CLV DRAWING NO.

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
SOUTH PARK BLVD. AT I-15/LAS VEGAS, NEVADA 89146
TELEPHONE (702) 804-8000 FAX: (702) 804-8018
F:\V24\Parcel B\Phase 1\dwg\mes\v24ab-D05.dwg mussehor

ENGINEER, STATE OF NEVADA, SONNY W. NEIGHBORS, No. 10318, PROFESSIONAL, CIVIL, 12/31/2006

DATE	DESCRIPTION	REV. DATE	DATE AGENCY APP.	DATE GCW APP.
10-25-05	ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION			

DESIGN: BE/DFF
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ISSUE EDITOR:
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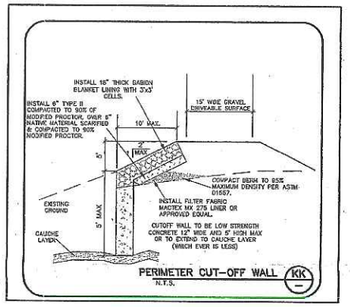
THE HOWARD HUGHES CORPORATION
SUMMERLIN VILLAGE 24 PARCEL B - SHADOW POINT - UNIT I
DETAILS II

SHEET 8
8 OF 20 SHTS

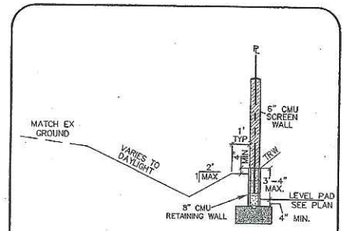
JOB NO. 62024.810

ISSUE DATE: ##/##/##

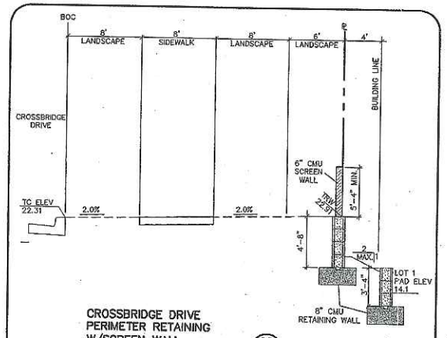
ge4248.dwg 8/29/13 rlh



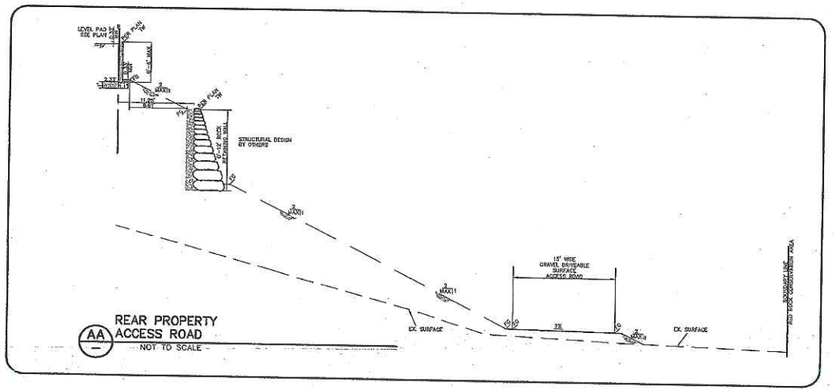
PERIMETER CUT-OFF WALL (KK)
N.T.S.



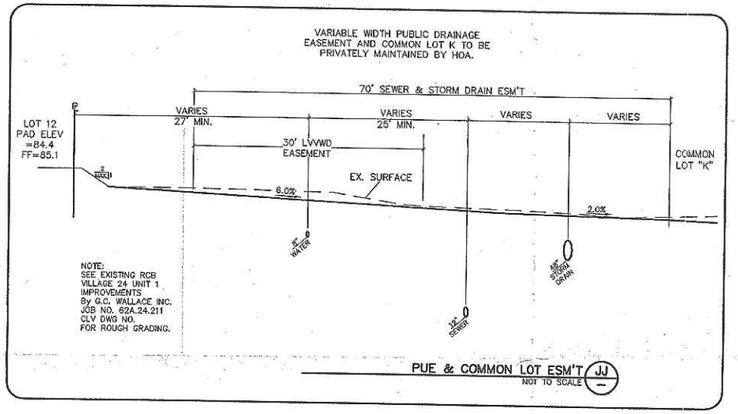
DAYLIGHT PERIMETER GRADING (HH)
N.T.S.



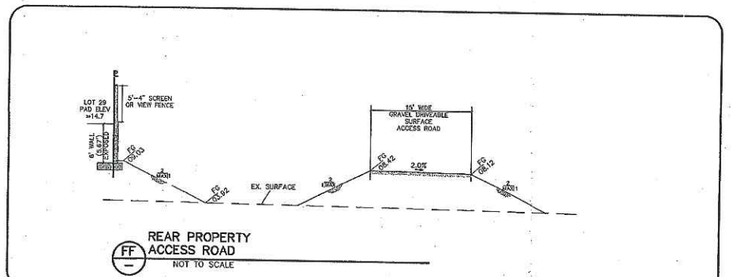
CROSSBRIDGE DRIVE PERIMETER RETAINING W/SCREEN WALL (GG)
N.T.S.



REAR PROPERTY ACCESS ROAD (AA)
NOT TO SCALE



PUE & COMMON LOT ESM'T (JJ)
NOT TO SCALE



REAR PROPERTY ACCESS ROAD (FF)
NOT TO SCALE

CLV DRAWING NO.

ENGINEER - STATE OF NEVADA
SONNY W. NEIGHBORS
Exp. 12/31/2008
CIVIL
No. 10118
PROFESSIONAL

REV	DATE	DESCRIPTION	DATE	AGEN. APP	DATE	GCW. APP

DATE: 1-10-05

DESIGN: BE/DFF
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ISSUE EDITOR:
PLOT DATE: 01-07-05
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1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
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ISSUE DATE: 01/07/05 ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION

THE HOWARD HUGHES CORPORATION
SUMMERLIN VILLAGE 24 PARCEL B - SHADOW POINT - UNIT I
DETAILS III

SHEET 9
9 OF 20 SHTS

JOB NO. 62024.810

VILLAGE 24
COMMUNITY PARK
NP-1

EXISTING CROSSBRIDGE DR VILLAGE 24, UNIT 1 IMPROVEMENTS By GC WALLACE, INC. JOB NO. 62A.24.211 CLV DWG NO.

CROSSBRIDGE DR. (PUBLIC)

EXISTING RCB VILLAGE 24, UNIT 1 IMPROVEMENTS By GC WALLACE, INC. JOB NO. 62A.24.211 CLV DWG NO.

EXISTING VILLAGE 24 PARCEL A

EXISTING PARCEL A VILLAGE 24, IMPROVEMENTS By GC WALLACE, INC. JOB NO. 62024.810 CLV DWG NO.

LEAF FOREST PL. (PRIVATE)

ASPEN TREE AVE. (PRIVATE)

LOFTY PINE AVE. (PRIVATE)

SUGARBERRY PL. (PRIVATE)

RUSTLING ELM AVE. (PRIVATE)

ACCESS ROAD (PRIVATE) SEE GRADING PLAN

RED ROCK CONSERVATION AREA

P.O.C.

COMMON LOT "J"

COMMON LOT "K"

70' SEWER & STORM DRAIN EASEMENT

30' LVVWD EASEMENT

SEE SHEET 18

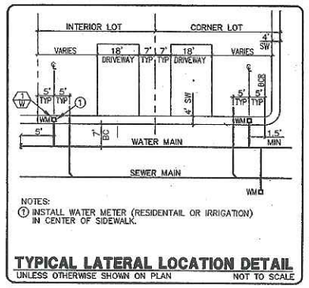
SEE SHEET 18

NOTE: APPROVAL OF THESE PLANS FOR THE WATER STUBOUT INSTALLATION WILL NOT BE CONSTRUED AS A COMMITMENT FOR WATER SERVICE TO THIS PROPERTY.

NOTE TO CONTRACTOR

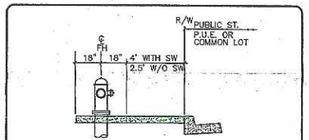
CONTRACTOR TO VERIFY ALL EXISTING SEWER & STORM DRAIN SIZES, INVERTS AND LOCATIONS, IF A DISCREPANCY EXISTS, CONTRACTOR TO NOTIFY THE ENGINEER PRIOR TO CONSTRUCTION.

NOTE: THIS PROJECT PLAN APPROVAL CONTINGENT ON H106984-AGT-110262-SUMMERLIN VILLAGE 24 UNIT 1 IMP. PLAN APPROVAL.



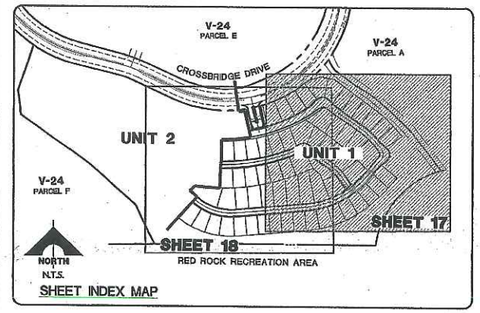
NOTES:
① INSTALL WATER METER (RESIDENTAIL OR IRRIGATION) IN CENTER OF SIDEWALK.

TYPICAL LATERAL LOCATION DETAIL
UNLESS OTHERWISE SHOWN ON PLAN — NOT TO SCALE



FIRE HYDRANT LOCATION DETAIL
FIRE HYDRANT TO BE INSTALLED PER UDACS STD. PLATE NO. 7

NOTES
1. SEE SHEET 2 FOR CONSTRUCTION NOTES.
2. SEE SHEET 4 FOR MASTER UTILITY PLAN.
3. FOR SEWER & STORM DRAIN DESIGN SEE PLAN & PROFILES.
4. FOR STREETLIGHTS SEE STREETLIGHT and TRAFFIC PLANS (SHTS. 19 & 20).



SHEET INDEX MAP

NORTH
40 0 40 80
SCALE FEET

UTILITY LEGEND

24"SDR	PROPOSED STORM DRAIN LINE W/SIZE
EX 24"SDR	EXISTING STORM DRAIN LINE W/SIZE
EX 8"W	EXISTING WATER LINE W/SIZE
8"W	PROPOSED WATER LINE W/SIZE
	1" PROPOSED WATER LATERAL & 3/4" METER PER UDACS PLATE 19 UNLESS OTHERWISE NOTED
	PROPOSED FIRE HYDRANT W/6" LATERAL & 6" G.V.
EX 8"S	EXISTING SEWER LINE W/SIZE
8"S	PROPOSED SEWER LINE W/SIZE
	PROPOSED SEWER LATERAL
	PROPOSED SEWER MANHOLE
	GATE VALVE
6"W 6"W	WATER REDUCER
	PROPOSED BLOW-OFF
	CONCRETE DRIVEWAY
BWV	REQUIRES BACKWATER VALVE
PRV	REQUIRES PRESSURE REDUCER VALVE

NOTE
INSTALL PIPELINE MARKER BALLS IN TRENCH ABOVE EACH HORIZONTAL ELBOW FITTING, PER UDACS PLATE No. 27.

RPPA NOTE
REDUCED PRESSURE PRINCIPLE ASSEMBLY (1) 1" RPPA

APPROVED REDUCED PRESSURE PRINCIPLE ASSEMBLY(S) SHALL BE INSTALLED PER THE UDACS STANDARD PLATE NO. 11A. NO WATER SHALL BE TAKEN FROM A SERVICE REQUIRING BACKFLOW PREVENTION UNTIL THE REDUCED PRESSURE PRINCIPLE ASSEMBLY HAS BEEN SUCCESSFULLY TESTED BY THE LVVWD.

ANY BLOCK WALL OR OTHER FENCE MATERIAL SHALL BE DESIGNED AND CONSTRUCTED AROUND THE OUTSIDE OF THE EASEMENT(S), TO ALLOW THE DISTRICT DIRECT ACCESS FROM THE ADJACENT RIGHT-OF-WAY.

EASEMENTS SHALL BE CLEARLY MARKED OR STAKED PRIOR TO THE START OF CONSTRUCTION.

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS
NORTH 05°39'55" WEST BEING THE BEARING OF THE WEST LINE OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA.

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APPROVED FOR CONSTRUCTION
CITY OF LAS VEGAS FIRE DEPARTMENT DATE

APPROVED FOR CONSTRUCTION
LAS VEGAS VALLEY WATER DISTRICT PROJ # H109269 DATE

CLV DRAWING NO.

SONNY W. HEINDORS — STATE OF NEVADA — No. 11151 — PROFESSIONAL ENGINEER — 12/31/2006

DATE: 10-05

REV.	DATE	DESCRIPTION	DATE AGEN. APP	DATE ORIG. APP

ISSUE DATE: 01/07/05 ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION

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CHECK: SWH
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 01-07-05
PLOT TIME: 09:03:42
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G. C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BOULEVARD, SUITE 400 • LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
bestrosis

THE HOWARD HUGHES CORPORATION
SUMMERLIN VILLAGE 24 PARCEL B - SHADOW POINT - UNIT 1
UTILITY PLAN I

DRAWING 17
17 OF 20 SHTS

JOB NO. 62024.810

SUMMERLIN

SM

VILLAGE 24 PARCEL B IMPROVEMENTS

"SHADOW POINT" - UNIT II

CITY OF LAS VEGAS
STATE OF NEVADA
A.P.N. 137-22-000-011

DEVELOPER

The Howard Hughes Corporation SM
An Affiliate of THE ROUSE COMPANY

THE HOWARD HUGHES CORPORATION
a Delaware corporation

10000 W. CHARLESTON, SUITE 200
LAS VEGAS, NEVADA 89135
OFFICE PHONE NO. (702) 791-4300
OFFICE FAX NO. (702) 791-4450

ENGINEER

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
OFFICE: (702) 804-2000, FAX: (702) 804-2299
SUMMERLIN OFFICE 10000 CHARLESTON BLVD., STE. 130
OFFICE: (702) 804-2160, FAX: (702) 804-2295

APPROVALS

CLV PLANNING DEPARTMENT

THIS PLAN MEETS THE APPLICABLE STANDARDS IF THE PLANNING AND DEVELOPMENT DEPARTMENT

M. MARGO WHEELER, AICP, CURRENT PLANNING MANAGER — DATE

"APPROVAL OF THESE PLANS IS LIMITED TO THOSE IMPROVEMENTS CONSTRUCTED IN THE DEDICATED RIGHTS-OF-WAY AND / OR DEDICATED EASEMENTS. THIS APPROVAL DOES NOT AUTHORIZE THE CONSTRUCTION OF ANY IMPROVEMENTS THAT DEVIATE FROM ADOPTED STANDARDS AND / OR SPECIFICATIONS, EXCEPT THOSE SPECIFICALLY LISTED UNDER DEVIATIONS FROM STANDARD. THE ENGINEER SHALL RESOLVE ANY DEVIATION OTHER THAN THOSE LISTED IN DEVIATIONS FROM STANDARDS IN FAVOR OF THE UNIFORM STANDARD DRAWINGS AND SPECIFICATIONS CLARK COUNTY AREA NEVADA".

CHARLES KAJKOWSKI, Jr.; PE #4784 — DATE
CITY ENGINEER
CITY OF LAS VEGAS, NEVADA

SUMMERLIN DESIGN REVIEW COMMITTEE

By: GERALD ROBBINS — DATE

Title: VICE PRESIDENT, DETAIL PLANNING

NEVADA POWER COMPANY DISCLAIMER

NOTE:
EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATIONS.

CALL BEFORE YOU DIG: 1(800)227-2600

NEVADA POWER Co. — REVIEWED BY — DATE

LAS VEGAS VALLEY WATER DISTRICT — DATE
SHEETS (1, 2, 4, & 13-15)

CLV FIRE DEPARTMENT — DATE

COX COMMUNICATIONS LAS VEGAS, INC. — DATE

SPRINT — DATE

SOUTHWEST GAS CORP. — DATE

SHEET 1 OF 17

CLV DRAWING NO.

STATE OF NEVADA — PROFESSIONAL ENGINEER — SCOTT A. WALLACE — No. 7517 — 12/31/2005

DESIGN: BE/DFF
DRAWN: BE/MDY
CHECK: SWN
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 01-04-05
PLOT TIME: 08:11:08

NO.	DESCRIPTION	REV. DATE	DATE AGEN. APP.	DATE DRW. APP.

DATE: 1-4-05

ISSUE DATE: ##/##/## ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION

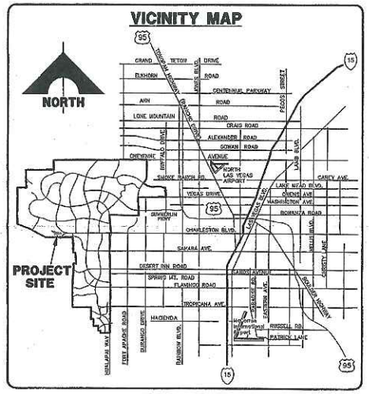
G. C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD. LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 FAX: (702) 804-2299
F:\V24\Parcel B\Phase II\dwg\vmss\V24obc001.dwg mondesgr

THE HOWARD HUGHES CORPORATION
SUMMERLIN VILLAGE 24 PARCEL B - SHADOW POINT - UNIT II
COVER SHEET

DRAWING 1
1 OF 17 SHTS

JOB NO. 62024.810

VICINITY MAP



NOTE

THIS SET OF DRAWINGS IS BASED UPON NAVD 88 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D388 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

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Avoid hitting overhead power lines. It's costly.
CALL BEFORE YOU DO OVERHEAD
CALL 1-702-227-2929

STREET QUANTITIES (PUBLIC)

STREETS		
2" A.C. PAVEMENT	8,497	S.Y.
4" TYPE II BASE	945	C.Y.
5" TYPE II BASE	150	C.Y.
6" TYPE II BASE	347	C.Y.
6" TYPE "L" C & G	4,428	L.F.
TYPE "A" CURBS	0	L.F.
CONCRETE VALLEY GUTTER	1,328	S.F.
4 INCH CONCRETE SIDEWALK	9,668	S.F.
STREET LIGHTS		
SINGLE ARM ST. LT.	16	EA.
CONDUIT	2,224	L.F.
IRRIGATION		
IRRIGATION SLEEVES	186	L.F.
5/8" METER W/ RPPA	0	E.A.
3/4" METER W/ RPPA	1	E.A.

LEGEND & ABBREVIATION

- (1) DETAIL DRAWING NUMBER
- (1/-) DRAWING NUMBER FOR DETAIL DRAWN ON SAME SHEET
- (1/7) DRAWING NUMBER FOR DETAIL WITH REFERENCE TO THE SHEET IT IS DRAWN ON
- (D1,D2/SIS) DRAWING NUMBER(S) FOR DETAIL(S) PER SUMMERLIN IMPROVEMENTS STANDARDS, OR PER STANDARDS IN ABBREVIATION TABLE
- (1/T) INDICATES CONSTRUCTION NOTE
- (A/T) INDICATES REMOVAL NOTE
- (1) INDICATES CURVE NUMBER
- INDICATES SEWER MANHOLE IN PROFILE
- INDICATES STORM DRAIN MANHOLE IN PROFILE
- (60.5) TC EXIST. SPOT ELEVATION
- END PIPE & PLUG
- CONCRETE ENCASEMENT
- EXISTING CALICHE BOULDERS
- EXISTING ROUGH GRADING

EMBANKMENT

- TOP
- PROPOSED
- BOTTOM
- BY SEPARATE CONTRACT
- EXISTING

ABBREVIATION

I	= IMPROVEMENTS
W	= WATER
S	= SEWER
SD	= STORM DRAIN
SL	= STREET LIGHTING
SIG	= TRAFFIC SIGNAL
SMH	= SEWER MANHOLE
SDMH	= STORM DRAIN MANHOLE
SIS	= SUMMERLIN IMPROVEMENT STANDARDS
CLV	= CITY OF LAS VEGAS
LVVWD	= LAS VEGAS VALLEY WATER DISTRICT
NDOT	= NEVADA DEPT. OF TRANSPORTATION
THHC	= THE HOWARD HUGHES CORPORATION
UDS	= UNIFORM DESIGN AND CONSTRUCTION STANDARDS (UDACS)
USD	= UNIFORM STANDARD DWGS. (CLARK COUNTY)
CCWRD	= CLARK COUNTY WATER RECLAIMATION DISTRICT

NOTE: LEGEND & ABBREVIATIONS IN THE "SUMMERLIN IMPROVEMENT STANDARDS", LATEST EDITION, WILL BE UTILIZED FOR ANY LEGEND & ABBREVIATION REQUIRED WHICH ARE NOT SHOWN.

CONSTRUCTION NOTES

ROADWAY

- (1/R) INSTALL A.C. PAVEMENT PER TYPICAL STREET SECTIONS, SEE SHEET 9.
- (2/R) INSTALL 6" "L" TYPE CURB & GUTTER — (S-42/SIS)
- (3/R) VERIFY LOCATION AND ELEVATION OF EXISTING ROADWAY IMPROVEMENT AND MATCH TO EXISTING CONDITION.
- (4/R) INSTALL "A" TYPE ISLAND CURB — (S-50/SIS)
- (5/R) INSTALL 8' CROSS GUTTER — (S-54/SIS)
- (6/R) INSTALL HANDICAP RAMP CURB DEPRESSION — (230/USD) SEE PLAN AND PROFILES FOR RAMP DATA
- (7/R) CONSTRUCT 4' CONC. SIDEWALK — (S-72/SIS) SEE SECTIONS ON SHEET 9
- (8/R) CONSTRUCT WALKWAY UNDERDRAIN — (D-31/SIS)
- (9/R) CONSTRUCT RESIDENTIAL DRIVEWAY — (223/UDS) (5/8)

WATER

- (1/W) INSTALL 3/4" WATER METER
- (2/W) INSTALL 8"X8" TEE
- (3/W) INSTALL 12"X12" TEE
- (4/W) INSTALL 12"X8" REDUCER
- (5/W) INSTALL 5° BEND
- (6/W) INSTALL 11-1/4° BEND
- (7/W) INSTALL 22-1/2° BEND
- (8/W) INSTALL 45° BEND
- (9/W) INSTALL 90° BEND
- (10/W) INSTALL CAP W/ 2" BLOW-OFF ASSEMBLY — (1/UDS)
- (11/W) INSTALL FIRE HYDRANT ASSEMBLY — (7/UDS)
- (12/W) INSTALL 12" GATE VALVE & BOX — (10/UDS)
- (13/W) INSTALL 6" GATE VALVE & BOX — (8/UDS)
- (14/W) REMOVE CAP & CONNECT TO EX WATER LINE (CONTRACTOR TO VERIFY SIZE, INVERT, AND LOCATION OF EX WATER LINE PRIOR TO CONSTRUCTION).
- (15/W) INSTALL 8" GATE VALVE & BOX — (8/UDS)
- (16/W) INSTALL 12"X8" TEE
- (17/W) INSTALL 8"x6" REDUCER
- (18/W) INSTALL 3/4" IRRIGATION METER W/ 1" RIPPA — (10/UDS) (11A/UDS)

SEWER

- (1/S) INSTALL 48" DIA. SEWER MANHOLE — (SD 1-8/CCWRD)
- (2/S) INSTALL ENDCAP AND MARKER — (SD-12/CCWRD)
- (3/S) REMOVE PLUG & CONNECT TO EX SEWER LINE (CONTRACTOR TO VERIFY SIZE, INVERT, AND LOCATION OF EX SEWER LINE PRIOR TO CONSTRUCTION).
- (4/S) INSTALL 4" SEWER LATERAL & MARKER — (SD-12/CCWRD) (SD-17/CCWRD)

STORM DRAIN

- (1/SD) INSTALL TYPE I 60" ACCESS STORM DRAIN MANHOLE — (403/USD)
- (2/SD) INSTALL TYPE III STORM DRAIN MANHOLE — (405/USD)
- (3/SD) INSTALL TYPE II STORM DRAIN MANHOLE — (406/USD)
- (4/SD) INSTALL MODIFIED TYPE "C" DROP INLET — (1/8)
- (5/SD) INSTALL TEMPORARY PLUG
- (6/SD) REMOVE PLUG & CONNECT TO EX STORM DRAIN LINE (CONTRACTOR TO VERIFY SIZE, INVERT, AND LOCATION OF EX STORM DRAIN LINE PRIOR TO CONSTRUCTION)

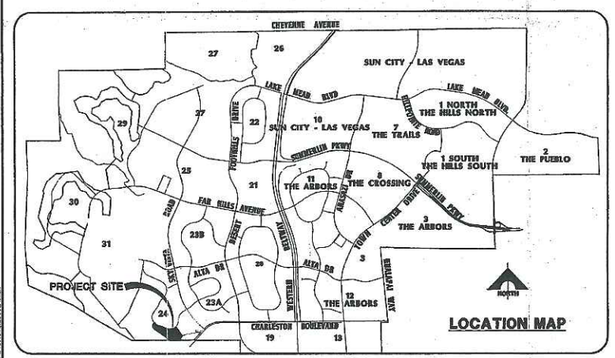
IRRIGATION

- (1/IR) BANK "A": 2-4" SCHD. 40 PVC — (U-18/SIS) (10/8)
- (2/IR) 1-6" SCHD. 40 PVC — (U-18/SIS) (10/8)

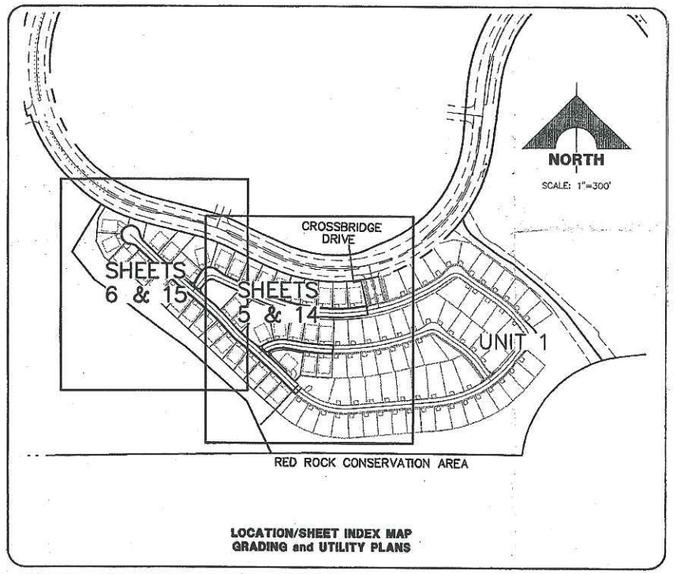
DEVIATIONS FROM STANDARDS

1. CENTERLINE RADII LESS THAN 300 FEET.
2. INTERSECTION KNUCKLES NOT STANDARD.
3. NO TANGENT BETWEEN REVERSE CURVES.

DEVIATIONS APPROVED BY CLV MONTH ?, 2004.



LOCATION MAP



LOCATION/SHEET INDEX MAP
GRADING and UTILITY PLANS

INDEX OF DRAWINGS

1. COVER SHEET
2. PROJECT DATA SHEET I
3. PROJECT DATA SHEET II
4. MASTER UTILITY PLAN
5. GRADING PLAN I
6. GRADING PLAN II
7. DETAILS I
8. DETAILS II
9. DETAILS III
10. ASPEN TREE AVENUE PLAN and PROFILE
11. LOFTY PINE AVENUE PLAN and PROFILE
12. FALL ORCHARD LANE PLAN and PROFILE I
13. FALL ORHCARD LANE PLAN and PROFILE II
14. UTILITY PLAN I
15. UTILITY PLAN II
16. STREETLIGHT and TRAFFIC CONTROL PLAN I
17. STREETLIGHT and TRAFFIC CONTROL PLAN II

LEGAL DESCRIPTION

LOT 2 OF BLOCK A OF "SUMMERLIN VILLAGE 24 UNIT NO. 1" ON FILE IN BOOK ; PAGE OF PLATS IN THE COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA, LYING WITHIN THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST, THE NORTH HALF (N 1/2) OF SECTION 3 AND THE NORTHEAST QUARTER (NE 1/4) OF SECTION 4, TOWNSHIP 21 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA.

APPROVAL:

LAS VEGAS VALLEY WATER DISTRICT — DATE

CLV DRAWING NO.

STATE OF NEVADA — PROFESSIONAL ENGINEER — SONNY W. NEIGHBORS — No. 10191 — Exp. 12/31/2005 — CIVIL

NO.	DESCRIPTION	DATE	BY	CHK	APP

DATE: 1-4-05
DATE: LAGEN. APP DATE: CNTY. APP

DESIGN: BE/DFF
DRAWN: BE/ADY
CHECK: SWN
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 01-04-05
PLOT TIME: 08:11:26

ISSUE DATE: ##/##/## ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION

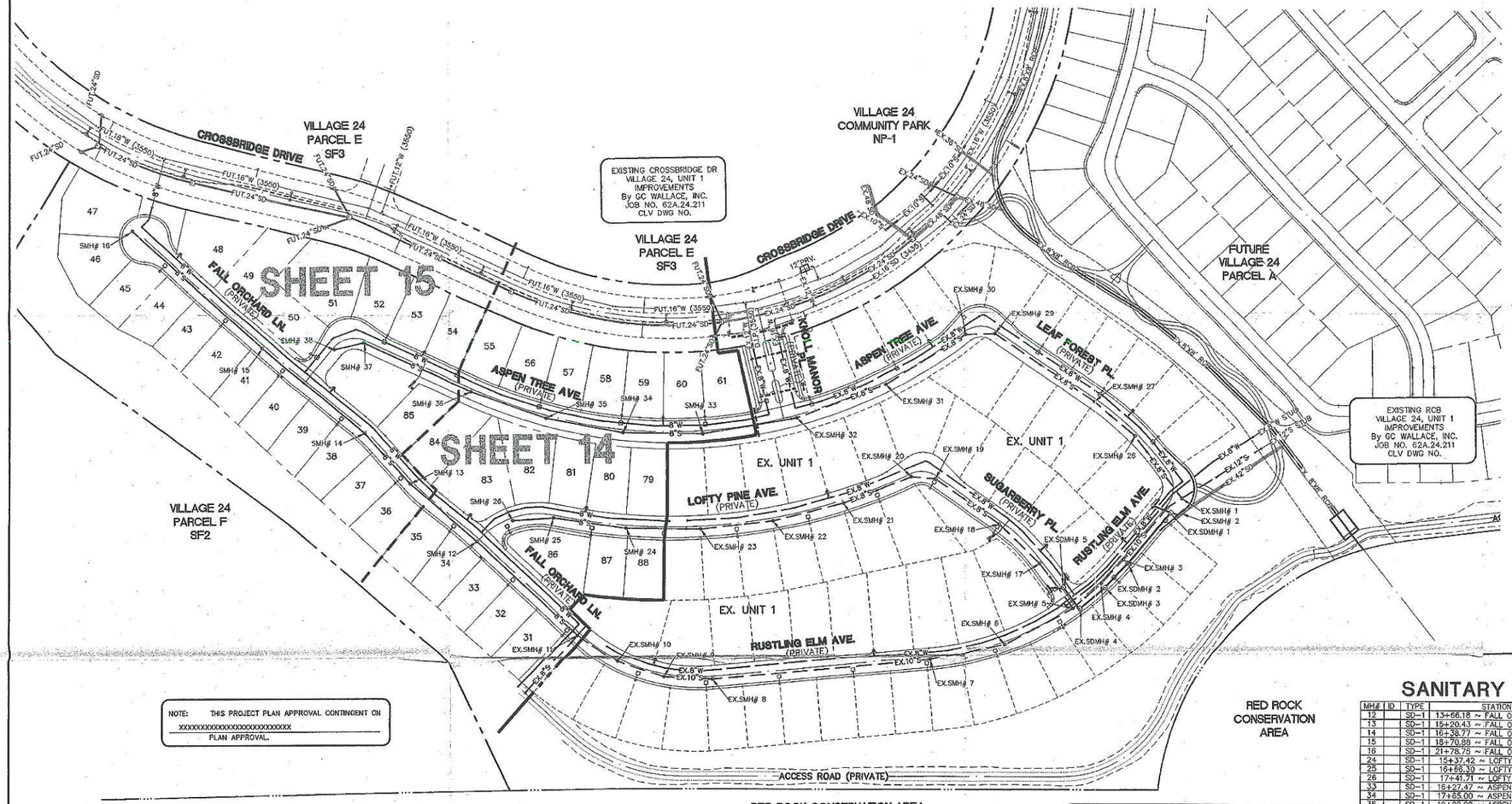
G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD. LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
F:\v24\Parcel B\Phase I\dev\xrefs\v24plan002.dwg

THE HOWARD HUGHES CORPORATION
SUMMERLIN VILLAGE 24 PARCEL B - SHADOW POINT - UNIT II
PROJECT DATA SHEET I

DRAWING 2
2 OF 17 SHTS

JOB NO. 62024810

mc426.dwg 070824.wdt



NOTE: THIS PROJECT PLAN APPROVAL CONTINGENT ON XXXXXXXXXXXXXXXXXXXXXXXXXX PLAN APPROVAL.

FIRE FLOW CALCULATIONS

– FIRE FLOW REQUIREMENT IS #### GALLONS PER MINUTE AT ## psi.	
– SQUARE FOOTAGE	< #### SF
– LARGEST AREA BETWEEN 4–HOUR AREA SEPARATION WALLS	N/A
– BUILDING HEIGHT	## FEET MAX.
– NUMBER OF STORIES	#
– TYPE OF CONSTRUCTION	V–NR
– OCCUPANCY	SINGLE FAMILY
– FULL AUTOMATIC FIRE SPRINKLER SYSTEM	NO

SANITARY SEWER MANHOLE SCHEDULE

MH#	ID	TYPE	STATION	OFFSET	RIM EL.	IN INV EL.	S INV EL.	E INV EL	W INV EL.	COMMENTS
12		SD–1	13+66.18 ~ FALL ORCHARD LN.	5.00' LT	3333.3±	–	–	3324.51	3324.71	
13		SD–1	15+20.43 ~ FALL ORCHARD LN.	5.00' LT	3342.4±	–	–	3333.97	3334.17	
14		SD–1	16+38.77 ~ FALL ORCHARD LN.	4.55' LT	3349.4±	–	–	3341.25	3341.45	
15		SD–1	18+70.86 ~ FALL ORCHARD LN.	5.00' LT	3363.9±	–	–	3355.37	3355.57	
16		SD–1	21+78.75 ~ FALL ORCHARD LN.	5.24' LT	3383.5±	–	–	3375.59	–	IN CUL–DE–SAC
24		SD–1	15+37.42 ~ LOFTY PINE AVE.	5.00' LT	3322.1±	–	–	3313.80	3314.00	
25		SD–1	16+66.30 ~ LOFTY PINE AVE.	5.00' LT	3327.6±	–	–	3319.44	3319.64	
26		SD–1	17+41.71 ~ LOFTY PINE AVE.	5.00' LT	3330.6±	–	–	3322.66	–	
33		SD–1	16+27.47 ~ ASPEN TREE AVE.	5.00' LT	3321.9±	–	–	3314.21	3314.41	
34		SD–1	17+65.00 ~ ASPEN TREE AVE.	5.00' LT	3328.5±	–	–	3320.49	3320.69	
35		SD–1	19+02.59 ~ ASPEN TREE AVE.	5.00' LT	3335.1±	–	–	3326.93	3327.13	
36		SD–1	20+40.98 ~ ASPEN TREE AVE.	5.00' LT	3341.7±	–	–	3333.37	3333.57	
37		SD–1	22+48.89 ~ ASPEN TREE AVE.	4.95' LT	3351.6±	–	–	3342.91	3343.11	
38		SD–1	23+09.45 ~ ASPEN TREE AVE.	3.00' LT	3354.5±	–	–	3345.45	–	

NOTE

THIS SET OF DRAWINGS IS BASED UPON NAVD 88 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

THIS PLAN IS FOR OVER–ALL PROJECT REVIEW AND INFORMATIONAL PURPOSES ONLY. SEE INDIVIDUAL PLAN AND PROFILE SHEETS, CONSTRUCTION DETAILS, AND LATERAL PROFILES FOR CONSTRUCTION INFORMATION.

NOTES TO CONTRACTOR

THE DISTRICT CANNOT GUARANTEE A WATER–TIGHT SHUTDOWN WHERE CONNECTIONS OR REPAIRS TO EXISTING FACILITIES ARE REQUIRED. THE CONTRACTOR SHALL ENSURE ALL LABOR AND EQUIPMENT IS AVAILABLE TO REMOVE FUGITIVE WATER WHICH MAY IMPEDE CONSTRUCTION AT ALL TIMES. COORDINATION WITH INSPECTION DIVISION MUST TAKE PLACE PRIOR TO ANY TRIAL SHUT DOWN.
CONTRACTOR TO INSTALL TEMPORARY SERVICE TO ENSURE PROPER SHUTDOWN IN THE EVENT NO OTHER APPURTENANCES ARE AVAILABLE.

WATER MAIN JOINT DEFLECTION (PVC, 4"–24")
PVC PIPE SHALL BE DEFLECTED AT THE JOINT ONLY. THE MAXIMUM ALLOWABLE DEFLECTION SHALL BE ONE (1) DEGREE PER JOINT WITH A MAXIMUM RADIUS OF CURVATURE OF 1,150 FEET, PER UDACS 2.06.01 AND 2.06.02.
FOR CHANGES IN DIRECTION EXCEEDING THE MAXIMUM ALLOWABLE JOINT DEFLECTION, FITTINGS SHALL BE USED.

INSTALL PIPELINE MARKER BALLS IN TRENCH ABOVE EACH HORIZONTAL ELBOW FITTING PER UDACS PLATE NO. 27.

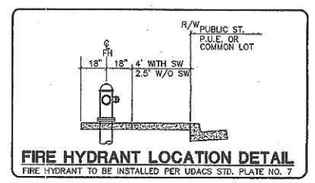
CONDITIONAL APPROVAL OF VALVED OUTLET (6" & LARGER)

THE WATER PLANS SHOW ONE OR MORE VALVED OUTLETS EXTENDING OUT OF PAVED AREAS. INSTALLATION OF THESE OUTLETS IS ACCEPTABLE; HOWEVER, IF THE OUTLETS ARE INCORRECTLY LOCATED OR NOT USED FOR ANY REASON WHEN THE PROPERTY IS ACTUALLY DEVELOPED, THE DEVELOPER SHALL ABANDON THE OUTLETS AT THE CONNECTION TO THE ACTIVE MAIN IN ACCORDANCE WITH THE AGENCY'S STANDARDS AND AT THE DEVELOPER'S EXPENSE. APPROVAL OF THE VALVED OUTLET DOES NOT PROVIDE OR IMPLY A WATER COMMITMENT.

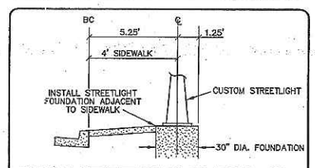
LAS VEGAS VALLEY WATER DISTRICT (LVVWD) STANDARD NOTES

LVVWD PROJECT #_____

1. NO WORK SHALL BEGIN UNTIL THE WATER PLANS HAVE BEEN APPROVED FOR CONSTRUCTION BY THE LVVWD. FOLLOWING WATER PLAN APPROVAL, NOTICE SHALL BE GIVEN TO THE LVVWD COMMUNICATION SUPPORT CENTER (258–7171) TWO (2) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION. FOR FUTURE INSPECTIONS, NOTICE MUST BE GIVEN BY 2:00 P.M. THE BUSINESS DAY PRIOR TO THE REQUESTED LVVWD INSPECTION. WHEN REQUESTING INSPECTIONS, PLEASE REFER TO THE PROJECT # IDENTIFIED ABOVE.
2. ALL WORK SHALL CONFORM TO LVVWD STANDARD PLATES, DRAWINGS, AND SPECIFICATIONS, AND TO THE 2003 EDITION OF THE UNIFORM DESIGN AND CONSTRUCTION STANDARDS FOR POTABLE WATER SYSTEMS (UDACS).
3. ALL WORK, EXCEPT AS MODIFIED BY THESE PLANS OR BY NOTE 2 ABOVE, SHALL BE DONE IN ACCORDANCE WITH THE MOST RECENT DRAFT OR EDITION OF THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFFSITE IMPROVEMENT, CLARK COUNTY AREA.
4. A SINGLE PIPE MATERIAL SHALL BE USED THROUGHOUT THE PROJECT UNLESS OTHERWISE APPROVED BY THE LVVWD. BE TYPE K COPPER TUBING WITH LVVWD APPROVED SERVICE SADDLES.
5. ALL WATER METER BOXES SHALL BE LOCATED OUTSIDE OF DRIVEWAY AREAS.
6. ALL VALVES SHALL BE LOCATED OUTSIDE OF DRIVEWAYS, VALLEY AND CURB GUTTERS.
7. ALL WATER AND STORM DRAIN OR SANITARY SEWER CROSSINGS SHALL CONFORM TO SECTION 2.19 OF THE 2003 EDITION OF THE UDACS.
8. ALL WATER FACILITIES SHALL BE FILLED, DISINFECTED, PRESSURE TESTED, FLUSHED, FILLED, AND AN ACCEPTABLE WATER SAMPLE OBTAINED, PRIOR TO CONNECTION TO THE LVVWD DISTRIBUTION SYSTEM.
9. THE CONTRACTOR MUST OBTAIN ALL METERS TWO (2) INCHES AND SMALLER FROM LVVWD CENTRAL STORES. TELEPHONE 258–3152 OR 258–3802, TWO WORKING DAYS PRIOR TO METER PICKUP.
10. ANY INTERRUPTION OF SERVICE MUST BE APPROVED BY THE LVVWD INSPECTION DIVISION PRIOR TO SHUTDOWN. PROPER WRITTEN NOTIFICATION MUST BE GIVEN TO ALL AFFECTED CUSTOMERS.
11. ALL WATER FACILITY CONSTRUCTION MATERIALS USED MUST BE AS LISTED ON THE LVVWD PRE–APPROVED MATERIALS AND MANUFACTURER'S LISTING FOR NEW FACILITIES, LATEST REVISION, OR SPECIFICALLY APPROVED ON THESE PLANS.
12. TELEPHONE "CALL BEFORE YOU DIG" AT 1–800–227–2600.



FIRE HYDRANT LOCATION DETAIL
FIRE HYDRANT TO BE INSTALLED PER UDACS STD. PLATE NO. 7



TYPICAL STREETLIGHT LOCATION (1/31)
NOT TO SCALE

ESTIMATED SEWER QUANTITIES

QUANTITIES ARE ESTIMATES ONLY. CONTRACTOR IS TO VERIFY DURING BIDDING PROCESS.

4" SEWER SDR–35 PVC (PUBLIC)	0	LF
8" SEWER SDR–35 PVC (PUBLIC)	2181	LF
10" SEWER SDR–35 PVC (PUBLIC)	0	LF
12" SEWER SDR–35 PVC (PUBLIC)	0	LF
48" STANDARD MANHOLES (PUBLIC)	14	EA
REINFORCED CONC. ENCASEMENT	0	LF

ESTIMATED WATER QUANTITIES

QUANTITIES ARE ESTIMATES ONLY. CONTRACTOR IS TO VERIFY DURING BIDDING PROCESS.

8" PVC WATER	2427	LF
6" PVC WATER	71	LF
FIRE HYDRANT ASSEMBLY	6	EA
2" MANUAL BLOW–OFF ASSEMBLY	2	EA
8" GATE VALVE	6	EA
6" GATE VALVE	0	EA
8" x 8" TEE	2	EA
8" x 6" TEE	0	EA
8" 90° BEND	2	EA
8" 45° BEND	1	EA
8" 22 1/2° BEND	3	EA
8" 11 1/4° BEND	3	EA
8" 5° BEND	11	EA
6" 11 1/4° BEND	0	EA
3/4" DOMESTIC WATER METER	41	EA
3/4" IRRIGATION METER W/ 1" RPPA	1	EA
5/8" IRRIGATION METER W/ 1" RPPA	0	EA
POWER PEDESTAL FOR IRRIGATION CONTROLLER	1	EA
4" C900 PVC SLEEVE	0	LF

SEWER AVERAGE DAILY FLOWS =
105 LOTS X 250 GPD/ERU = 26,250
(0.026 MGPD)

SEWER PEAK FLOWS = 89,250 GPD

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. 0388 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 05°59'55" WEST BEING THE BEARING OF THE WEST LINE OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA.

Avoid cutting underground utility lines. It's costly.
Call before you Dig.
1–800–227–2600
UNDERGROUND SERVICE (USA)

Avoid hitting overhead power lines. It's costly.
CALL BEFORE YOU DIG OVERHEAD
CALL 1–702–227–2929

APPROVED FOR CONSTRUCTION

CITY OF LAS VEGAS FIRE DEPARTMENT DATE

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE

CLV DRAWING NO._____

ENGINEER: STATE OF NEVADA — SONNY W. NEIGHBORS — No. 10191 — PROFESSIONAL — DATE: 1/10/07

REV.	DATE	DESCRIPTION	DATE	ASSN.	APP.	DATE	DOM.	APP.

DESIGN: BE/DFF
DRAWN: MDT
CHECK: SWN
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 12–06–04
PLOT TIME: 07:24:46

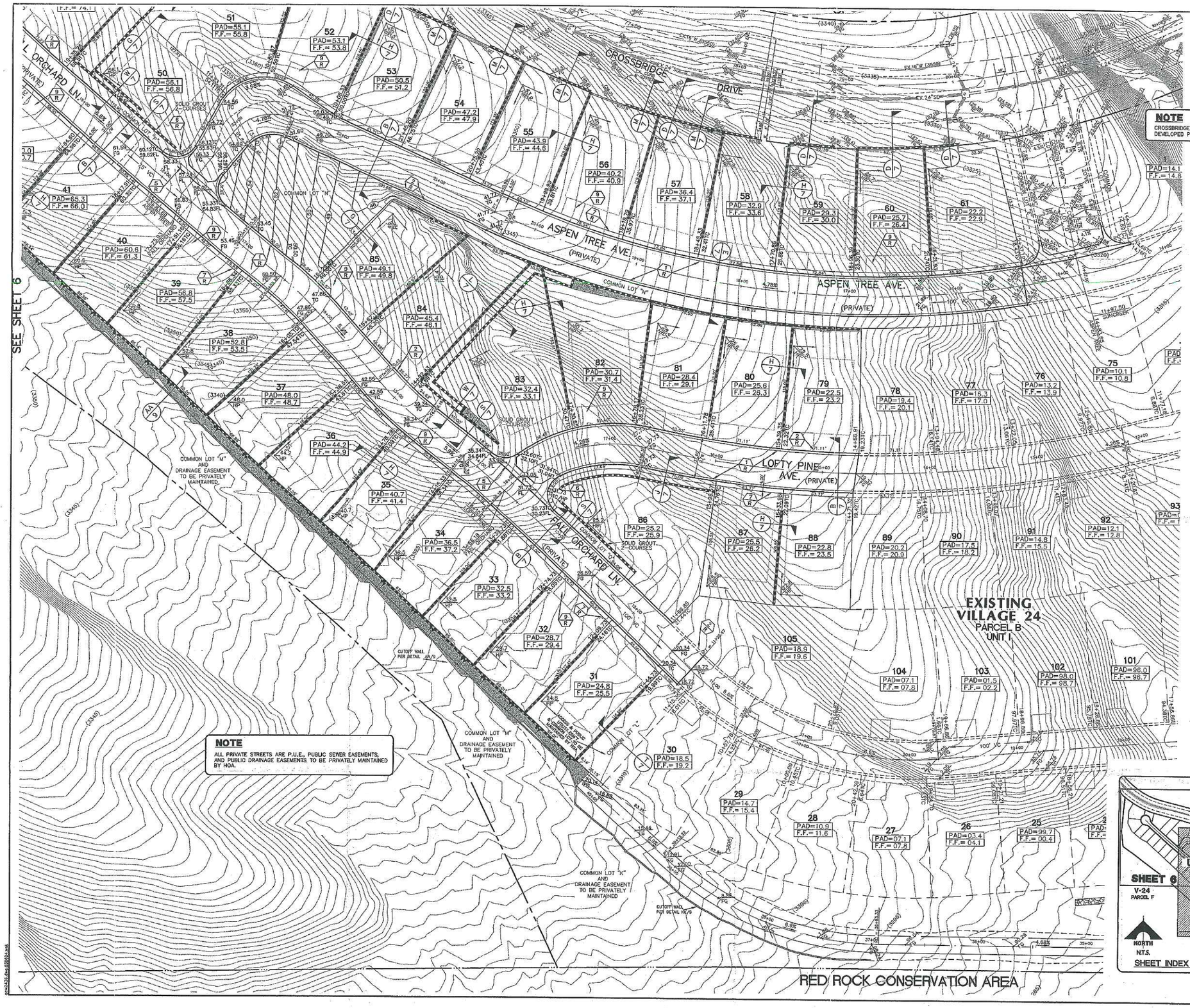
G. C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804–2000 • FAX: (702) 804–2299
mvdobson

F:\V24\Parcel B\Phase II\dwg\maps\v24plbc004.dwg

THE HOWARD HUGHES CORPORATION
VILLAGE 24 PARCEL B – SHADOW POINT – UNIT II
MASTER UTILITY PLAN

SHEET 4
4 OF 17 SHTS

ISSUE DATE: 12/06/04



STATE OF NEVADA PROFESSIONAL ENGINEER No. 10118 SONNY W. NEIGHBORS 10-05

REV.	DATE	DESCRIPTION	DATE	AGEN.	APP.	DRW.	APP.

DESIGN: BE/DFF
DRAWN: BE/ABJ/MDY
CHECK: SWN
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 01-07-05
PLOT TIME: 15:25:27

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
bestprofs
F:\v24\Parcel B\Phase 1\dwg\maps\v24pb-c005.dwg

ISSUE DATE: 01/07/05 ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION

THE HOWARD HUGHES CORPORATION

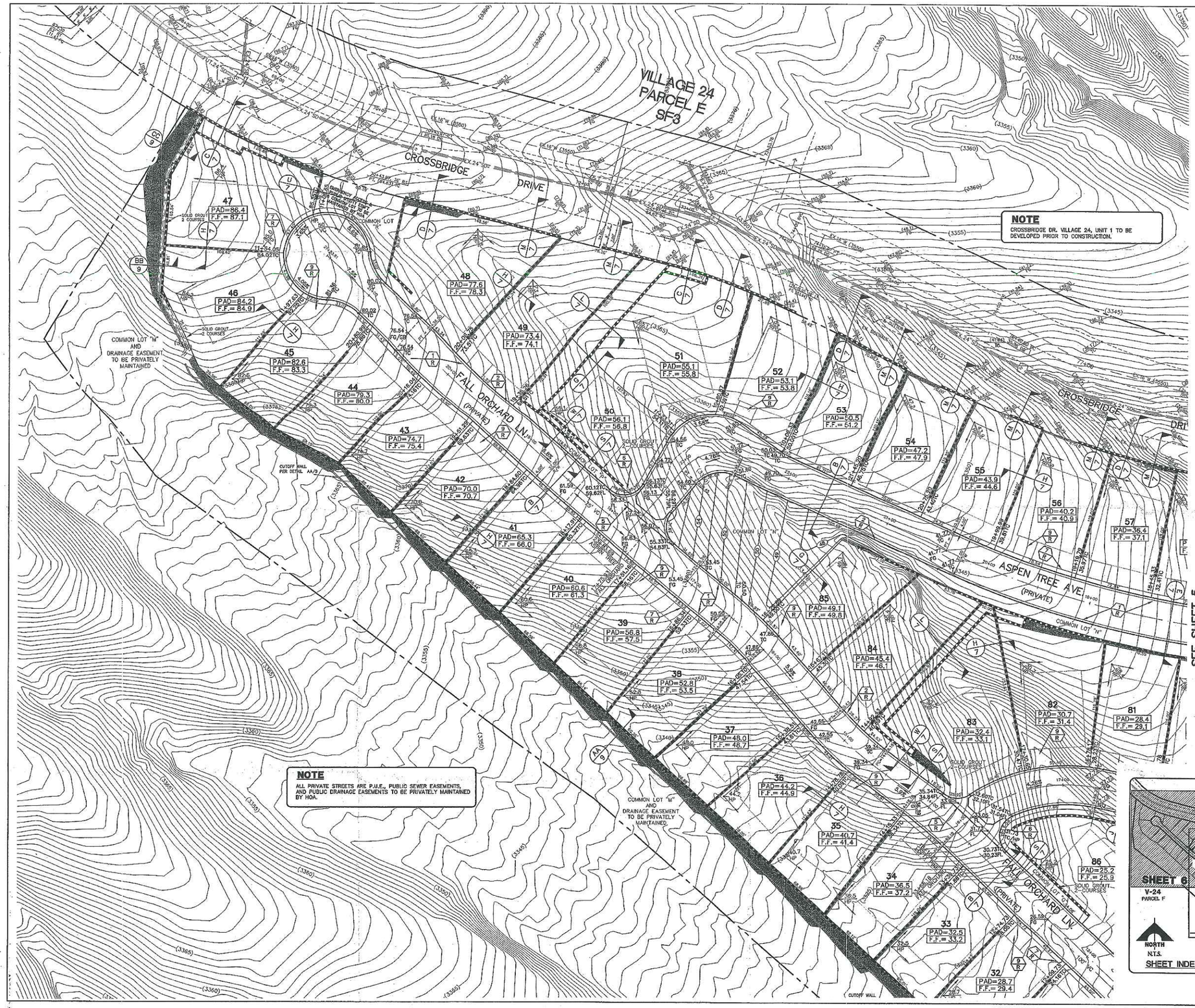
SUMMERLIN VILLAGE 24 PARCEL B - SHADOW POINT - UNIT II

GRADING PLAN I

JOB NO. 62024.80

DRAWING 5

5 OF 17 SHTS



ENGINEER'S EVALUATION OF GRADING QUANTITES

PLEASE NOTE THESE QUANTITIES ARE ESTIMATES ONLY. ACTUAL QUANTITIES MAY DIFFER FROM THE ESTIMATE DUE TO SOILS VARIATIONS IN THE FIELD. VOLUMES CALCULATED WITHOUT SHRINKAGE OR SUBSIDENCE FACTORS AND DO NOT INCLUDE OVEREXCAVATION REQUIRED FOR THE REMOVAL OF CALICHE OR ANY OTHER UNDESIRABLE MATERIALS. REFER TO THE SOILS REPORT FOR THESE AREAS. ALSO NOT INCLUDED ARE QUANTITIES FOR ADDITIONAL DITCHES & BERMS NOT SHOWN THAT MAY BE REQUIRED BY THE ENGINEER.

COMPUTED CUT VOLUME: 108,657 c/y
COMPUTED FILL VOLUME: 247,033 c/y
IMPORT: 140,376 c/y

DRAINAGE CERTIFICATION

I CERTIFY THAT THIS GRADING PLAN IS IN CONFORMANCE WITH THE APPROVED DRAINAGE STUDY.

SONNY W. NEIGHBORS, PE NO. 10118 DATE

NOTE

THIS SET OF DRAWINGS IS BASED UPON NAVD 88 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

BENCHMARK

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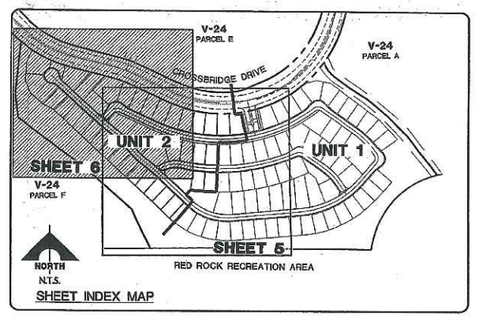
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 05°59'55" WEST, BEING THE BEARING OF THE WEST LINE OF SECTION 34, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA, AS SHOWN BY MAP THEREOF ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA.

Avoid cutting underground utility lines. It's costly.
Call before you Dig.
1-800-227-2600
UNDERGROUND SERVICE (USA)

Avoid hitting overhead power lines. It's costly.
CALL BEFORE YOU DO OVERHEAD
CALL 1-702-227-2929



SHEET INDEX MAP

CLV DRAWING NO.

STATE OF NEVADA — PROFESSIONAL ENGINEER — SONNY W. NEIGHBORS — No. 10118 — 12/31/2008 — CIVIL

DATE: 1-10-07

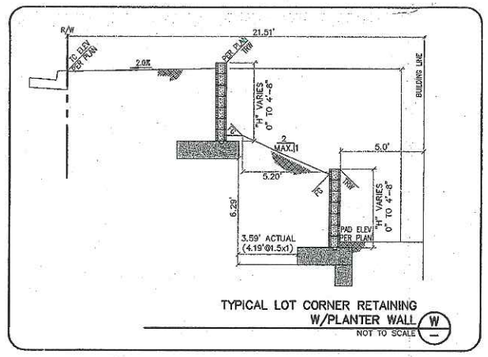
DESCRIPTION	DATE	AGEN. APP.	DATE	DGN. APP.

DESIGN: BE/DFF
DRAWN: BE/RB/MDY
CHECK: SWN
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 01-10-08
PLOT TIME: 08:41:44

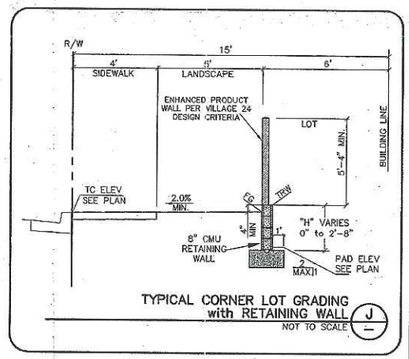
G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAMPOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
bestrada
F:\V24\Parcel B\Plotsa dDwg\Vmap\V24pbc005.dwg

THE HOWARD HUGHES CORPORATION
SUMMERLIN VILLAGE 24 PARCEL B - SHADOW POINT - UNIT II
GRADING PLAN II

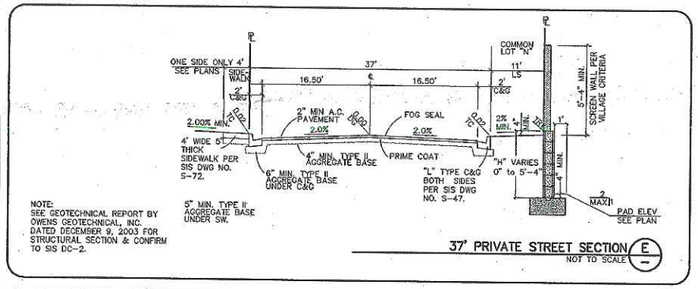
DRAWING 6
6 OF 17 SHTS



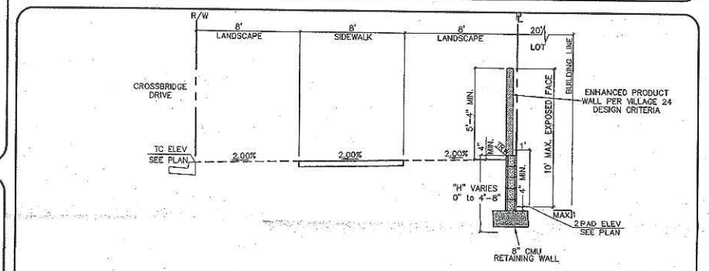
TYPICAL LOT CORNER RETAINING W/PLANTER WALL (W)
NOT TO SCALE



TYPICAL CORNER LOT GRADING with RETAINING WALL (J)
NOT TO SCALE



37' PRIVATE STREET SECTION (E)
NOT TO SCALE



CROSSBRIDGE DRIVE PERIMETER RETAINING W/SCREEN WALL (D)
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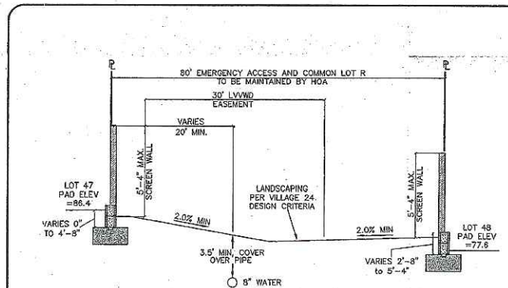
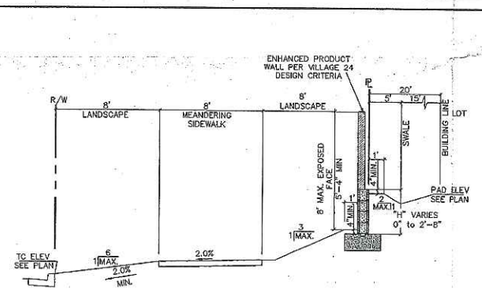


EMERGENCY ACCESS AND PUBLIC UTILITY EASEMENT (U)
NOT TO SCALE



CROSSBRIDGE DRIVE PERIMETER RETAINING W/SCREEN WALL (M)
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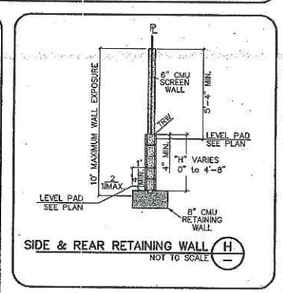
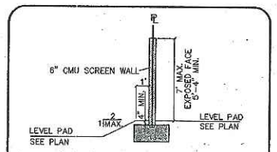
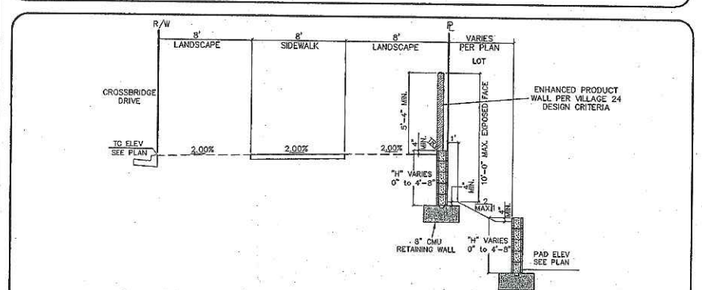


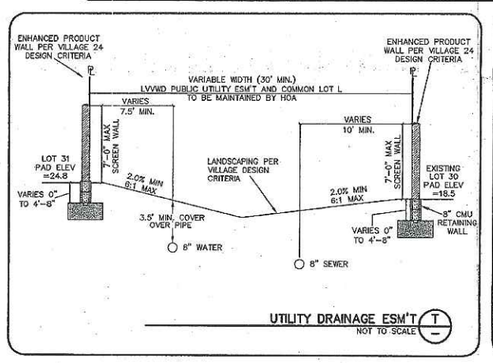
SIDE & REAR RETAINING WALL (H)
NOT TO SCALE



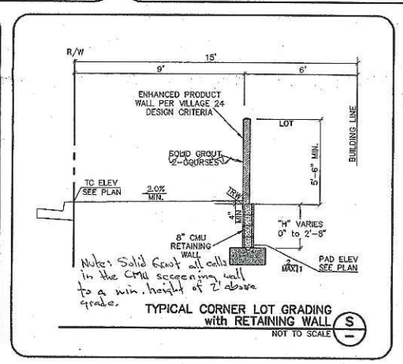
SIDE & REAR SCREEN WALL (G)
NOT TO SCALE



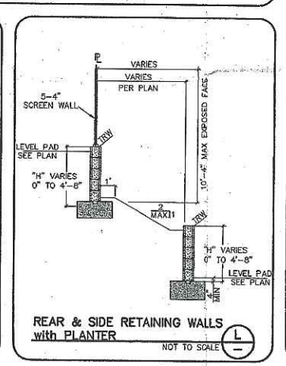
CROSSBRIDGE DRIVE PERIMETER RETAINING W/PLANTER (C)
NOT TO SCALE



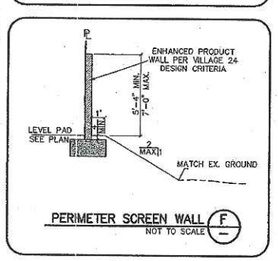
UTILITY DRAINAGE ESM'T (T)
NOT TO SCALE



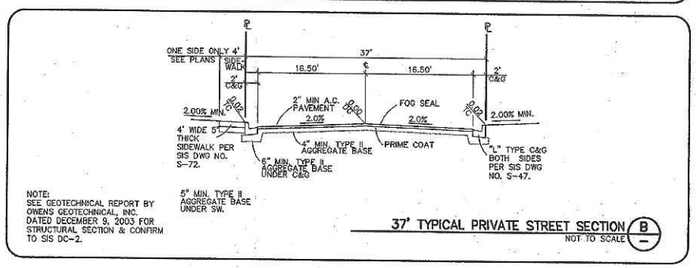
TYPICAL CORNER LOT GRADING with RETAINING WALL (S)
NOT TO SCALE



REAR & SIDE RETAINING WALLS with PLANTER
NOT TO SCALE



PERIMETER SCREEN WALL (F)
NOT TO SCALE



37' TYPICAL PRIVATE STREET SECTION (B)
NOT TO SCALE

CLV DRAWING NO.

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SUMMERLIN AVENUE, SUITE 100, LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 FAX: (702) 804-2001
F:\V24\Parcel B\Phase II\dwg\imps\v24ebc007.dwg mysdesc

DESIGN: BE/DFF
DRAWN: BE/ADY
CHECK: SMH
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 01-04-05
PLOT TIME: 08:15:28

DESCRIPTION	DATE	DRW	APP	DATE	AGEN. APP

DATE: 1 to 5

ENGINEER - STATE OF NEVADA - PROFESSIONAL - SCOTT M. HANSEN - No. 10918 - DATE: 12/31/2003 - CIVIL

ISSUE DATE: ##/##/## ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION

THE HOWARD HUGHES CORPORATION

SUMMERLIN VILLAGE 24 PARCEL B - SHADOW POINT - UNIT II

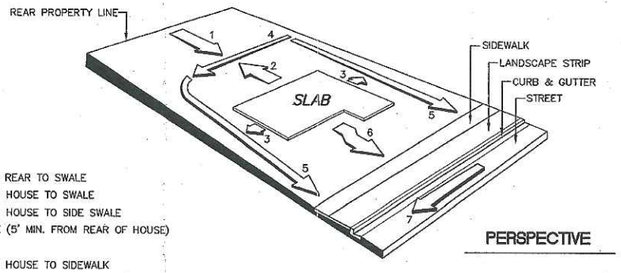
DETAILS I

SHEET 7

7 OF 17 SHTS

JOB NO. 62024.810

sht24-25.dwg 12/03/03



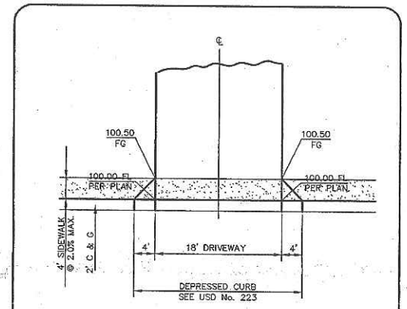
1. SLOPE FROM REAR TO SWALE
2. SLOPE FROM HOUSE TO SWALE
3. SLOPE FROM HOUSE TO SIDE SWALE
4. REAR SWALE (5' MIN. FROM REAR OF HOUSE)
5. SIDE SWALE
6. SLOPE FROM HOUSE TO SIDEWALK
7. SLOPE OF STREET

PERSPECTIVE

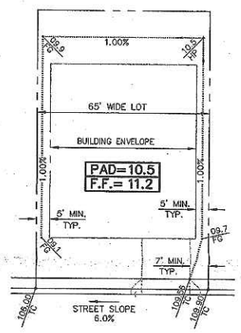
F.H.A. TYPE "A" DRAINAGE

TYPICAL GRADING

TYPICAL GRADING — NOT TO SCALE — 9

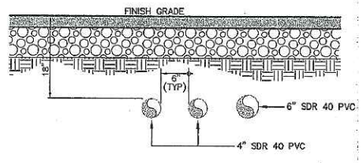


DRIVE APRON DETAIL — NOT TO SCALE — 5



NOTE: SEE GRADING PLAN FOR RETAINING WALL LOCATIONS.

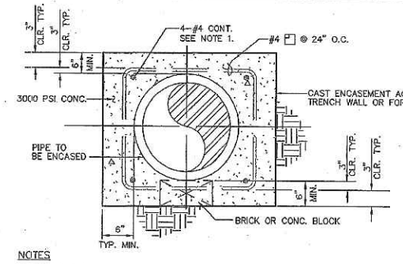
TYPICAL LOT GRADING with SIDEWALK — NOT TO SCALE — 4



NOTES:

1. CONTRACTOR TO EXTEND SLEEVES 1' (12") BEHIND BACK OF CURB, OR 1' (12") BEHIND GUTTER OF ROUNDABOUT, TYPICAL.
2. IRRIGATION SLEEVES MUST BE INSTALLED PER SIS DWG NO. U-18.

IRRIGATION SLEEVES – BANK "A" — NOT TO SCALE — 10



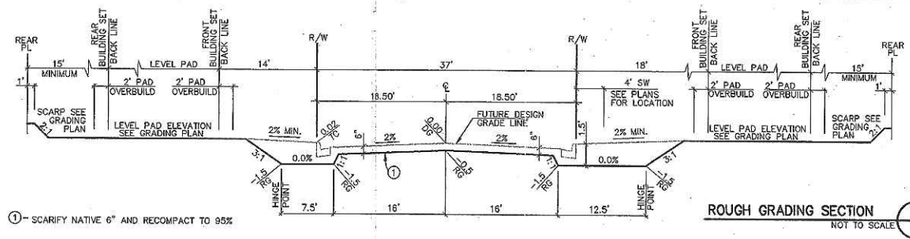
NOTES

1. CONCRETE ENCASEMENT TO EXTEND 10' PAST OUTSIDE OF WATER PIPE WHERE APPLICABLE.
2. FOR ADDITIONAL DETAIL INFORMATION, REFER TO C.C.W.R.D. "PIPE BEDDING METHODS," STANDARD NO. SD-11.
3. SEE PLAN FOR LOCATION AND LENGTH.

REINFORCED CONCRETE ENCASEMENT — NOT TO SCALE — 7

NOTE: SEE GRADING PLAN FOR RETAINING WALL LOCATIONS.

TYPICAL LOT GRADING without SIDEWALK — NOT TO SCALE — 3



① – SCARIFY NATIVE 6" AND RECOMPACT TO 95%

ROUGH GRADING SECTION — NOT TO SCALE — 6

CLV DRAWING NO.

SONNY NEIGHBORS
No. 10118
PROFESSIONAL ENGINEER – STATE OF NEVADA
DATE: 12-15

NO.	DESCRIPTION	DATE	APP'D	DATE	APP'D	DATE

DESIGN: BE/DEF
DRAWN: BE/MDY
CHECK: SNN
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 01-04-05
PLOT TIME: 08:15:45
mydgsx

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD. • LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
F:\V24\Parcel B\Phase II\dwg\xrefs\V24plc-c00B.dwg

ISSUE DATE: ##/##/## ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION

THE HOWARD HUGHES CORPORATION

SUMMERLIN VILLAGE 24 PARCEL B - SHADOW POINT - UNIT II

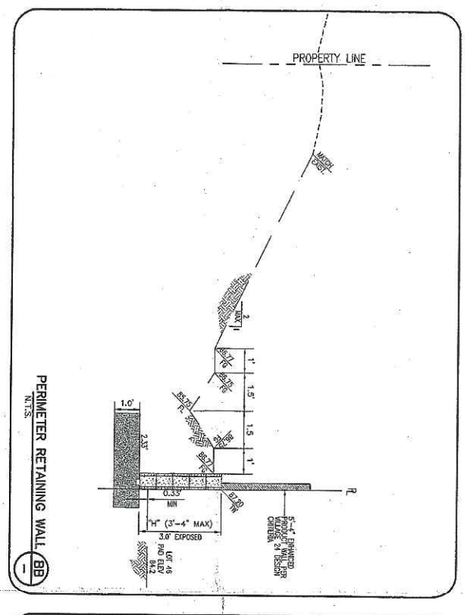
DETAILS II

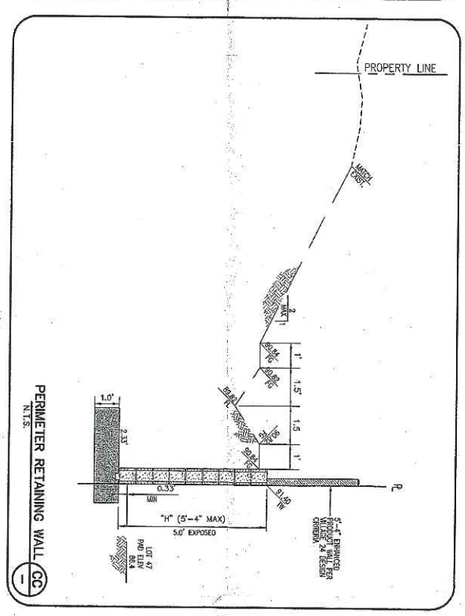
JOB NO. 62024.810

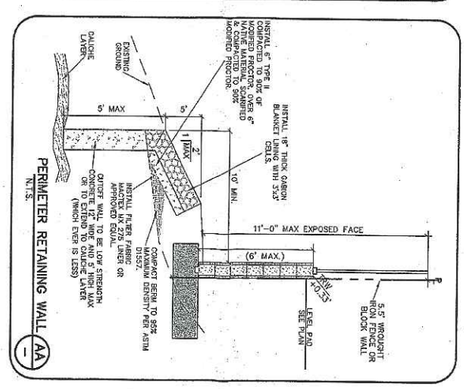
SHEET 8

8 OF 17 SHTS

pc7458.dwg 020912.dp







CLV DRAWING NO.

SHEET 9 OF 17 SHTS	THE HOWARD HUGHES CORPORATION SUMMERLIN VILLAGE 24 PARCEL B - SHADOW POINT - UNIT II DETAILS III	G.C. WALLACE, INC. Engineers/Planners/Surveyors 1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146 TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299 F:\v24\Parcel B\Phase II\dwg\jmps\v24pbc009.dwg bestrada	DESIGN: BE/DFF DRAWN: BE/MDY CHECK: SWN ISSUE DATE: ISSUE EDITOR: PLOT DATE: 01-07-05 PLOT TIME: 15:15:03

REV	DATE	DESCRIPTION	DATE	AGEN. APP	DATE	GCW. APP

PROFESSIONAL ENGINEER - STATE OF NEVADA
SONNY W. NEIGHBORS
Exp. 12/31/2005
CIVIL
No. 10118

DATE: 1-10-05

JOB NO. 62024.810

ISSUE DATE: 01/07/05 ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION

MA 627.1

UPDATE TO THE TECHNICAL DRAINAGE STUDY FOR SUMMERLIN VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS

62A.24.220

May 2004

Prepared for:

The Howard Hughes Corporation
a Delaware Corporation
10000 West Charleston Blvd., Ste. 200
Las Vegas, Nevada 89135
Phone: (702) 791- 4300
Fax: (702) 791- 4453

G. C. WALLACE, INC.
Engineers/Planners/Surveyors

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM			DATE: June 11, 2004
TO: Land Development Services Department of Public Works			FROM: Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	Technical Drainage Study for; Sky Vista Drive Improvements, SMRLN Village 23A/24		COPIES TO: G.C. Wallace
Street Names:	Charleston Blvd & Desert Moon Road		The Howard Hughes Corp.
File Number:	F:\Depot\DSMEMOS\DS3542C.doc		Bart Anderson, P.E., DevCo
Parcel Number:	137-22-000-010		CCRFCD
Zoning Action:			
FEMA Flood Zone	YES	NO X	
Proposed Storm Drain	YES X	NO	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID G.R. No.
1st Submittal	3/22/2004	4/5/2004	Not Approved	$400.00	121564: $400
2nd Submittal	4/12/2004	4/23/2004	Conditionally Approved	$400.00	122922: $400
3rd Submittal & CCRFCD Concurrence	5/28/2004	6/11/2004	See Comments Below	$100.00	126060: $100
			TOTAL FEES (LDDRS):	$900.00	---

REMARKS:

The Drainage Study for the subject project has been reviewed and:

X	is approved subject to conformance to all City standards and the following conditions:
	must be resubmitted or supplemented including the following:
	is conditionally approved subject to Clark County Regional Flood Control District concurrence.

1. *The "Future Berms" proposed in Figure 5 (Existing Conditions Drainage Map) must be constructed prior to any parcel developments of Village 24.*

NOTE: Any future changes to the proposed design (or design assumptions) as outlined in the approved drainage study and attached preliminary grading plan which affect drainage must be addressed in a Drainage Study Amendment and accepted by the City of Las Vegas Flood Control Section. Additionally, conditional acceptance of a drainage study is valid for a period of one (1) year. If the proposed construction has not been completed in that time period, the City of Las Vegas reserves the right to require additional conditions and/or submission and acceptance of a complete drainage study update prior to further construction of a project.

NOTE: All land surface area disturbances over 1 acre require a storm water discharge permit issued by the Nevada Division of Environmental Protection (NDEP). A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. A storm water discharge permit application and associated information may be downloaded from the web site:

http://www.state.nv.us/ndep/bwpc/storm01.htm

Projects that disturb more than one acre of land must submit to NDEP a "Notice of Intent" for inclusion under Storm Water Permit No. NVR100000 along with the appropriate filling fee.

END OF REMARKS

T/R/S: T20S/R59E/34
AREA K-34

B&H/ave

Post-it® Fax Note 7671 | Date | # of pages ▶
To Randy Grawbish | From Albert Sung

G. C. WALLACE, INC.
Engineers • Planners • Surveyors

G. C. WALLACE, PE/SE, PLS
JAMES A. DUDDLESTEN, PE
MICHAEL D. ROSS, PE
CHRISTOPHER W. ANDERSON, PE
CALVIN L. BLACK, PE, PLS
E. ROBERT PETERSON
SCOTT R. PLUMMER, PE
BENJAMIN C. SMITH, PE
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THOMAS P. DYSON, PE
DOUGLAS M. HANKEL
BERT A. HUGHES, PE
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NOEL C. LAUGHLIN, PE
MARVIN W. MAIZE
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S. WILLIAM NEIGHBORS, PE
THOMAS R. NICHOLS, PE
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G. IRA WALLACE, PE

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RANDALL K. GREMLICH, PE
PASCAL HAYES, PE/SE
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DANNY E. HILL, PLS
DAPHNE L. HOFFMAN
DONALD L. HOTCHKISS JR., PE
BILL HUNTER, PE
RANDY W. MROWICKI, PLS
JOHNNIE R. PATE JR., PE, PTOE
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MARY A. CARR, PE
RICHARD G. CLARKE
GLENN R. CURTIS, III, CMI
IAIN DOLEMAN
MARK A. FERDA, PE
JOHN FITCH, PE
ERIC G. GILES, PE/SE
NICHOLAS G. GOLZ, PE
BRIJ M. GULATI, PE, PTOE
KEITH HATTON, PE
TODD C. HAYNE, PE
GERALD L. HOLTON, PLS, WRS
RUSSELL D. JAMISON, PLS
JOSH JOHNSON, PE
KAYANN JONGSMA, PE
TODD N. KELLEY, PE
DENNIS R. KETTERMAN
FRED KHANBOLOUKI, PE
SCOTT R. LANDERMAN, PLS
PAUL R. LOHMAN, PE
MICHAEL J. LUDWIG, PE
CHRISTOPHER M. LUQUETTE, PE, CFM
JEFFERY J. McBRIDE, PE
WILLIAM METCALF
MATTHEW D. MEYER, PE
WILLIAM J. MEYER, PE
RIMAH I. NAZZAL, PE/SE
GIA D. NGUYEN, PE
JERRY E. PASCOE, PLS
WESLEY T. PETTY, PE
CHRISTOPHER W. PLUTTE, PE
GEOFFREY G. PURSE, PE
RICK J. READ, PE
BRADFORD G. ROCKWELL, PE
CHRISTOPHER B. SMITH, PE
DONNA J. STRALOW, PLS
S. TRACY STRATTON
CHURAIRAT (ANN) TANAKUL, PE
GRANT Y. TOKUMI, PE
KEVIN L. TOMLINSON, PE
JERRY TSUNETA
F. EDUARDO VILLALOBOS, PE/SE
PAUL J. VILLALUZ, PE
KEVIN W. WALLACE, PLS
GLENN B. WATANABE, PE
STEPHEN L. WEATHERMAN, PE
MANSON W. WONG, PE, PTOE
DEBRA M. YAMACHIKA, PE
DERICK D.J. YORO, PE

AFFILIATE OFFICE IN
SACRAMENTO, CA

62A.24.220

May 28, 2004

Albert Sung, P.E.
City of Las Vegas
Land Development Services
731 South Fourth Street
Las Vegas, Nevada 89101

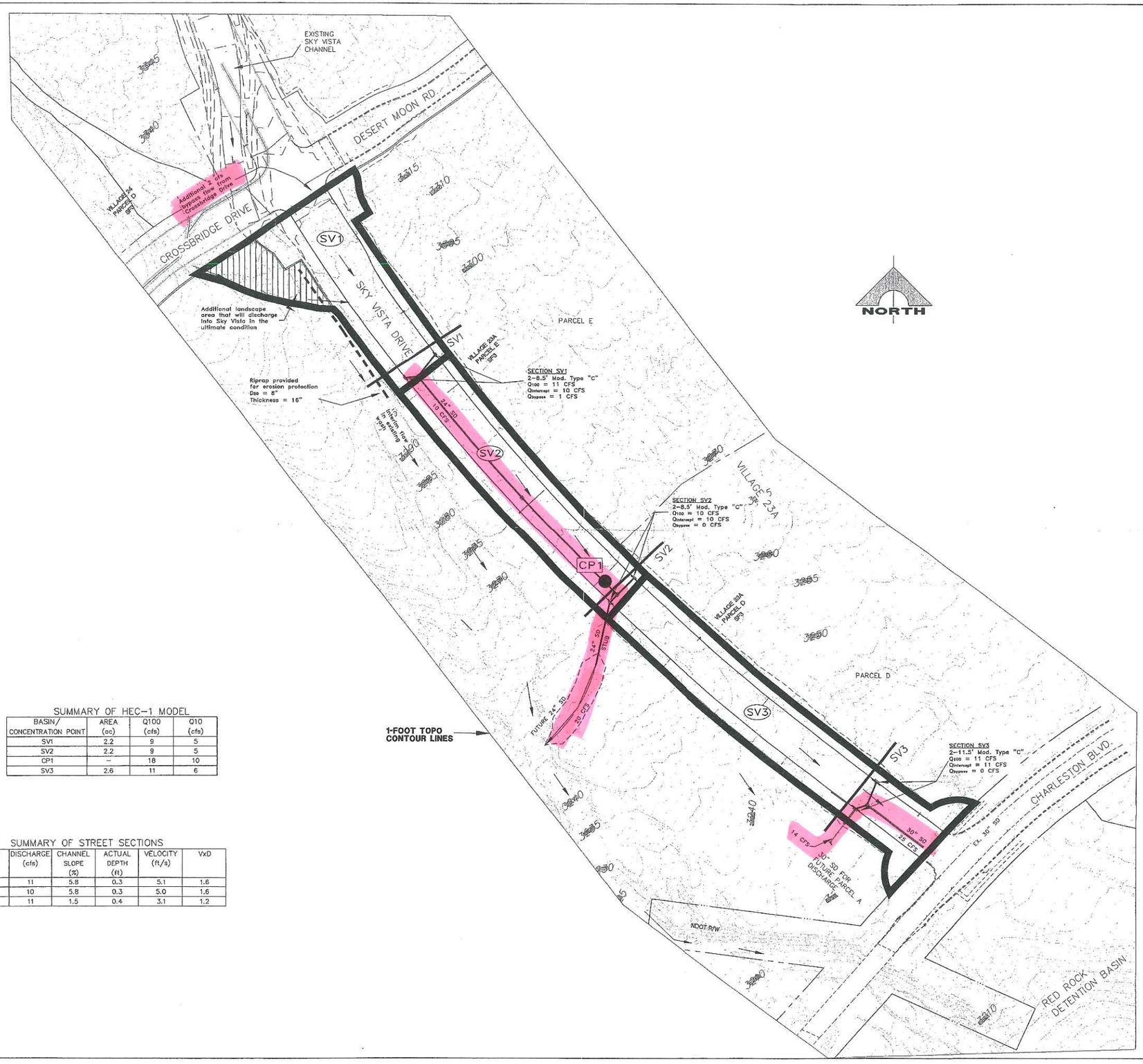
Subject: **Update to the Technical Drainage Study for Summerlin village 23A/24 Sky Vista Drive Improvements (DS 3542A)**

Dear Mr. Sung:

On April 23, 2004, the City of Las Vegas (CLV) approved the *Technical Drainage Study for Sky Vista Drive Improvements in Summerlin Village 23A/24*. Since the approval of the drainage study, some additional areas (not previously accounted for) are now surface draining to Sky Vista Drive. In order to intercept the additional flow, one set of drop inlets needed to be upsized.

According to the Summerlin Village 24 Unit 1 Study (DS 3551), the intersection of Sky Vista Drive and Crossbridge Drive will be warped, and as a result, 2 cfs from Crossbridge Drive will be diverted down Sky Vista Drive (on the east side of the median). In addition to the 2 cfs bypass flow from Crossbridge Drive, the landscape area located at the northwest corner of Sky Vista Drive (in between Parcel A and Crossbridge Drive) will surface drain to Sky Vista Drive (on the west side of the median) via sidewalk drain. This additional area generates approximately 2 cfs. Therefore, a total flow of 4 cfs has been added to the surface flow of Sky Vista Drive.

In order to intercept the extra 4 cfs, the drop inlets at Section SV1 (Station 315+98) have been upsized from two 5.5-foot Modified Type "C" drop inlets to two 8.5-foot Modified Type "C" drop inlets. The revised 8.5-foot drop inlets will intercept a total of 10 cfs (instead of 7 cfs) and will allow 1 cfs to bypass as surface flow to Section SV2. At Section SV2, the originally proposed 8.5-foot drop inlets (which will remain the same size) will now intercept 10 cfs (instead of 9 cfs). The total flow that will be intercepted by the drop inlets and the 24-inch storm drain is 20 cfs [18 cfs (from Concentration Point CP1) + 2 cfs (bypass flow from Crossbridge Drive)]. The 20 cfs is proposed to discharge into the undeveloped Parcel A. The future Parcel A development will take into account the 20 cfs.



SUMMARY OF HEC-1 MODEL

BASIN/ CONCENTRATION POINT	AREA (ac)	Q100 (cfs)	Q10 (cfs)
SV1	2.2	9	5
SV2	2.2	9	5
CP1	–	18	10
SV3	2.6	11	6

SUMMARY OF STREET SECTIONS

STREET SECTION	DISCHARGE (cfs)	CHANNEL SLOPE (%)	ACTUAL DEPTH (ft)	VELOCITY (ft/s)	VxD
SECTION SV1	11	5.8	0.3	5.1	1.6
SECTION SV2	10	5.8	0.3	5.0	1.6
SECTION SV3	11	1.5	0.4	3.1	1.2

LEGEND

- SUBBASIN BOUNDARY
- ON1 SUBBASIN DESIGNATION
- CP1 COMBINATION POINT
- FLOW DIRECTION
- SV1 STREET SECTION LOCATION
- FUTURE STORM DRAIN LAYOUT
- PROPOSED STROM DRAIN LAYOUT
- EXISTING STORM DRAIN LAYOUT

REV	DATE	DESCRIPTION	DATE	AGEN	APP	DATE	GCW	APP	DATE

DESIGN:
DRAWN:
CHECK:
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 09-28-04
PLOT TIME: 09:44:53

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
G:\62A-24-220\drainage\dwg\Rev-fig 5r.dwg

SUMMERLIN VILLAGE 23A/24

SKY VISTA DRIVE IMPROVEMENTS

REVISED FIGURE 5R
PROPOSED CONDITIONS DRAINAGE MAP

SHEET
R-Fig5R
OF SHTS

File: rev-SF4.wb2 05/28/04

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

TIME OF CONCENTRATION

G.C. Wallace, Inc. | **SUMMERLIN VILLAGE 23A/24** | **BY: ALG**

File: SF4.WB2 | **SKY VISTA DRIVE IMPROVEMENTS**

Project No.: 62A.24.220 | **PROPOSED CONDITIONS** | **DATE: 05/28/04**

SUB-BASIN DATA						INITIAL / OVERLAND TIME (Ti)			TRAVEL TIME (Tt)					Tc CHECK URBANIZED BASINS		Tc	Tlag	REMARKS
DESIG: (1)	DEV./EX. (D or E)	CN	K (2)	AREA Ac (3)	AREA Mi^2	INITIAL LENGTH Feet (4)	SLOPE % (5)	Ti Min (6)	TRAVEL LENGTH Feet (7)	SLOPE % (8)	V1 VELOCITY FPS (9a)	V2 VELOCITY FPS (9b)	Tt Min (10)	TOTAL LENGTH Ft (11)	Tc = (L/180)+10 Min (12)	Min (13)	Tlag= 0.6Tc/60 Hours	
SV1	D	94.0	0.8508	2.22	0.00347	62	2.0	2.8	550	4.3	4.2	6.3	2.1	612	13.4	4.9	0.049	USE 0.05 MIN
SV2	D	94.0	0.8508	2.22	0.00347	62	2.0	2.8	705	5.8	4.9	7.4	2.2	767	14.3	5.0	0.050	
SV3	D	94.0	0.8508	2.58	0.00403	62	2.0	2.8	800	5.8	4.9	7.4	2.4	862	14.8	5.2	0.052	

Ti = 1.8 (1.1 - K) L^1/2 / S^1/3

K = 0.0132 (CN) - 0.39

V1 applies to the first 500 feet of travel distance;

V2 applies to the remaining travel distance.

Existing V2 = 29.4*(S/100)^1/2

Developed V2 = 30.6*(S/100)^1/2

REFERENCE : **STANDARD FORM 4**

```
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              MAY  1991                *
*            VERSION 4.0.1E             *
*     Lahey F77L-EM/32 version 5.01     *
*       Dodson & Associates, Inc.       *
*  RUN DATE  05/25/04  TIME  11:23:14   *
*****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*            (916) 551-1748             *
*                                       *
*****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1 HEC-1 INPUT PAGE 1

```
LINE          ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

              *DIAGRAM
    1         ID   ********************************************************************
    2         ID   * ..................................................................... *
    3         ID   * :       SUMMERLIN VILLAGE 23A/24                                  : *
    4         ID   * :       SKY VISTAL DRIVE IMPROVEMENTS                             : *
    5         ID   * :                                                                 : *
    6         ID   * :      PROPOSED CONDITIONS                                        : *
    7         ID   * :      DEVELOPED ONSITE                                           : *
    8         ID   * :                                                                 : *
    9         ID   * :.................................................................: *
   10         ID   * :              RETURN PERIOD_ _ _ _10/100-YEAR                    : *
   11         ID   * :              DISTRIBUTUION_ _ _ _6-HOUR SDN3                    : *
   12         ID   * :              PROJECT NO_ _ _ _ _ 62A.24.220                     : *
   13         ID   * :              FILENAME_ _ _ _ _ _   TEST.H1                      : *
   14         ID   * :              DATE_ _ _ _ _ _ _ _   5/27/04                      : *
   15         ID   * :.................................................................: *
   16         ID
   17         ID        DEPTH AREA REDUCTION FACTOR
   18         ID              SQ MILES             DARF
   19         ID                0-.1               1.0
   20         ID              10-YEAR              .575
   21         ID
   22         IT      5       0       0     300
   23         IO      5
   24         IN      5       0       0
   25         JR    PREC      1    .575
              *
   26         KK     SV1
   27         KM   ONSITE SUBBASIN SV1
   28         KM             AREA       ACRES
   29         BA  .00347
   30         PB    3.34
   31         PC    .000    .020    .057    .070    .087    .108    .124    .130    .130    .130
   32         PC    .130    .130    .130    .133    .140    .142    .148    .158    .172    .181
   33         PC    .190    .197    .199    .200    .201    .204    .214    .229    .241    .249
   34         PC    .251    .256    .270    .278    .281    .283    .295    .322    .352    .409
   35         PC    .499    .590    .710    .744    .781    .812    .819    .835    .851    .856
   36         PC    .860    .868    .876    .888    .910    .926    .937    .950    .970    .976
   37         PC    .982    .985    .987    .989    .990    .993    .993    .994    .995    .998
   38         PC    .998    .999   1.00
   39         LS       0      94
   40         UD    .050
              *
   41         KK     SV2
   42         KM   ONSITE SUBBASIN SV2
   43         KM             AREA   ACRES
   44         BA  .00347
   45         LS       0      94
   46         UD  0.050
              *
```

1 HEC-1 INPUT PAGE 2

```
LINE          ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

   47         KK     CP1
   48         KM  CONCENTRATION POINT CP1
   49         KM  COMBINE SV1 AND SV2
   50         HC       2
              *
   51         KK     SV3
   52         KM   ONSITE SUBBASIN SV4
   53         KM             AREA    ACRES
   54         BA  .00403
```

```
          55          LS       0      94
          56          UD   0.052
                      *
          57          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

    26        SV1
              .
              .
    41        .          SV2
              .            .
              .            .
    47        CP1............
              .
              .
    51        .          SV3

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*****************************************
 *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
 *              MAY   1991               *
 *           VERSION 4.0.1E              *
 *     Lahey F77L-EM/32 version 5.01     *
 *       Dodson & Associates, Inc.       *
 *  RUN DATE  05/25/04  TIME  11:23:14   *
 *****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*           (916) 551-1748              *
*                                       *
*****************************************
```

```
*****************************************************************
* ............................................................ *
* :        SUMMERLIN VILLAGE 23A/24                          : *
* :        SKY VISTAL DRIVE IMPROVEMENTS                     : *
* :                                                          : *
* :       PROPOSED CONDITIONS                                : *
* :       DEVELOPED ONSITE                                   : *
* :                                                          : *
* :..........................................................: *
* :              RETURN PERIOD_ _ _ _10/100-YEAR             : *
* :              DISTRIBUTUION_ _ _ _6-HOUR SDN3             : *
* :              PROJECT NO_ _ _ _ _ 62A.24.220              : *
* :              FILENAME_ _ _ _ _ _   INT-V21.H1            : *
* :              DATE_ _ _ _ _ _ _ _   2/13/04               : *
* :..........................................................: *
```

```
                DEPTH AREA REDUCTION FACTOR
                        SQ MILES            DARF
                           0-.1             1.0
                         10-YEAR           .575


  23 IO          OUTPUT CONTROL VARIABLES
                      IPRNT           5  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

     IT          HYDROGRAPH TIME DATA
                       NMIN           5  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      2    0  ENDING DATE
                     NDTIME        0055  ENDING TIME
                     ICENT           19  CENTURY MARK

                  COMPUTATION INTERVAL    0.08 HOURS
                       TOTAL TIME BASE   24.92 HOURS

          ENGLISH UNITS
               DRAINAGE AREA          SQUARE MILES
               PRECIPITATION DEPTH    INCHES
               LENGTH, ELEVATION      FEET
               FLOW                   CUBIC FEET PER SECOND
               STORAGE VOLUME         ACRE-FEET
               SURFACE AREA           ACRES
               TEMPERATURE            DEGREES FAHRENHEIT

     JP          MULTI-PLAN OPTION
                      NPLAN           1  NUMBER OF PLANS

     JR          MULTI-RATIO OPTION
                     RATIOS OF PRECIPITATION
                    1.00      0.57
1

              PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
                                FLOWS IN CUBIC FEET PER SECOND,  AREA IN SQUARE MILES
                                                TIME TO PEAK IN HOURS


                                                          RATIOS APPLIED TO PRECIPITATION
 OPERATION       STATION     AREA     PLAN            RATIO 1  RATIO 2
                                                        1.00     0.57

 HYDROGRAPH AT
+                  SV1       0.00      1   FLOW          9.       5.
                                           TIME        3.50     3.50
```

HYDROGRAPH AT						
+	SV2	0.00	1	FLOW	9.	5.
				TIME	3.50	3.50
2 COMBINED AT						
+	CP1	0.01	1	FLOW	18.	10.
				TIME	3.50	3.50
HYDROGRAPH AT						
+	SV3	0.00	1	FLOW	11.	6.
				TIME	3.50	3.50

*** NORMAL END OF HEC-1 ***

SUMMERLIN

SM

VILLAGE 23A/24
SKY VISTA DRIVE IMPROVEMENTS

FROM CHARLESTON BOULEVARD TO DESERT MOON ROAD

2004

DEVELOPER

The Howard Hughes Corporation SM
An Affiliate of THE ROUSE COMPANY

THE HOWARD HUGHES CORPORATION
a Delaware corporation

10000 W. CHARLESTON, SUITE 200
LAS VEGAS, NEVADA 89135
OFFICE PHONE NO. (702) 791-4300
OFFICE FAX NO. (702) 791-4450

ENGINEER

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
OFFICE: (702) 804-2000, FAX: (702) 804-2299
SUMMERLIN OFFICE 10000 CHARLESTON BLVD., STE. 130
OFFICE: (702) 804-2160, FAX: (702) 804-2295

DRAINAGE CERTIFICATION

I CERTIFY THAT THE GRADING PLANS ARE IN CONFORMANCE WITH THE APPROVED DRAINAGE STUDY ON FILE AT THE CITY OF LAS VEGAS FOR THIS PROJECT.

BERT A. HUGHES R.P.E. 10259 DATE

THE HOWARD HUGHES CORPORATION,
a Delaware corporation

By: LARRY BROCATO DATE

Title: EXECUTIVE VICE PRESIDENT, DEVELOPMENT

"APPROVAL OF THESE PLANS IS LIMITED TO THOSE IMPROVEMENTS CONSTRUCTED IN THE DEDICATED RIGHTS-OF-WAY AND / OR DEDICATED EASEMENTS. THIS APPROVAL DOES NOT AUTHORIZE THE CONSTRUCTION OF ANY IMPROVEMENTS THAT DEVIATE FROM ADOPTED STANDARDS AND / OR SPECIFICATIONS, EXCEPT THOSE SPECIFICALLY LISTED UNDER DEVIATIONS FROM STANDARD. THE ENGINEER SHALL RESOLVE ANY DEVIATION OTHER THAN THOSE LISTED IN DEVIATIONS FROM STANDARDS IN FAVOR OF THE UNIFORM STANDARD DRAWINGS AND SPECIFICATIONS CLARK COUNTY AREA NEVADA".

CHARLES KAJKOWSKI, Jr.; PE #4784 DATE
CITY ENGINEER
CITY OF LAS VEGAS, NEVADA

CLV PLANNING DEPARTMENT

THIS PLAN MEETS THE APPLICABLE STANDARDS IF THE PLANNING AND DEVELOPMENT DEPARTMENT

MARGO WHEELER, AICP, CURRENT PLANNING MANAGER DATE

NEVADA POWER COMPANY DISCLAIMER

NOTE:
EXISTING UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATIONS.

CALL BEFORE YOU DIG: 1(800)227-2600

NEVADA POWER Co. REVIEWED BY DATE

LAS VEGAS VALLEY WATER DISTRICT DATE
(SHEETS ----------)(PROJECT #-----)

CLV FIRE DEPARTMENT DATE

SPRINT DATE

SOUTHWEST GAS CORP. DATE

COX COMMUNICATIONS DATE

SHEET 1 OF 19

CLV DRAWING NO.

REV.	DATE	DESCRIPTION	DATE	AGEN. APP	DATE	GCW APP

DESIGN:
DRAWN:
CHECK:
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 03-17-04
PLOT TIME: 14:40:35

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
F:\v24\SkyVista\dwg\lmps\SVD-c001.dwg gpeterson

ISSUE DATE: 03/22/04 ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION

SUMMERLIN
VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS
COVER SHEET

JOB NO. 62A.24.220

SHEET 1
1 OF 19 SHTS

CITY OF LAS VEGAS GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE "UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA NEVADA" , LATEST ISSUE; THE "UNIFORM STANDARD DRAWINGS FOR PUBLIC WORKS CONSTRUCTION, CLARK COUNTY AREA NEVADA", LATEST REVISED EDITION; THE "SUMMERLIN IMPROVEMENT STANDARDS" FOR WORK IN THE SUMMERLIN AREA; AND OTHER APPLICABLE APPROVED STANDARDS ISSUED BY THE CONTROLLING AGENCY; THE UNIFORM BUILDING CODE; AND ALL LOCAL CITY CODES AND ORDINANCES APPLICABLE, EXCEPT AS NOTED ON THIS SHEET AS "DEVIATIONS FROM STANDARDS".

2. THE EXISTENCE AND LOCATION OF ANY OVERHEAD OR UNDERGROUND UTILITY LINES, PIPES, OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A RESEARCH OF THE AVAILABLE RECORDS. EXISTING UTILITIES AS SHOWN FROM CLV PLANS LIBRARY ARE APPROXIMATE AND FOR RECORD PURPOSES. EXISTING UTILITIES ARE LOCATED ON PLANS ONLY FOR THE CONVENIENCE OF THE CONTRACTOR. EXISTING UTILITY SERVICE LATERALS MAY NOT BE SHOWN ON THE PLANS. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, LOCATE ALL UNDERGROUND AND OVERHEAD INTERFERENCE'S, WHICH MAY AFFECT HIS OPERATION DURING CONSTRUCTION AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO SAME. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR OVERHEAD UTILITIES SO AS TO SAFELY PROTECT ALL PERSONNEL AND EQUIPMENT, AND SHALL BE RESPONSIBLE FOR ALL COST AND LIABILITY IN CONNECTION THEREWITH.

3. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING UTILITY LINES, STRUCTURES AND STREET IMPROVEMENTS WHICH ARE TO REMAIN IN PLACE, FROM DAMAGE, AND ALL SUCH IMPROVEMENTS OR STRUCTURES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED SATISFACTORY TO THE CITY ENGINEER AND OWNING UTILITY COMPANY AT THE EXPENSE OF THE CONTRACTOR.

4. ALL CONSTRUCTION SHALL BE SHOWN ON THESE PLANS, ANY REVISIONS SHALL HAVE THE PRIOR WRITTEN APPROVAL OF THE CITY ENGINEER.

5. TYPE V CEMENT SHALL BE USED IN ALL OFF-SITE CONCRETE WORK. CONCRETE TO BE 3000 P.S.I. MINIMUM @28 DAYS. MIX DESIGN TO BE APPROVED BY THE CITY ENGINEER, PRIOR TO THE USE ON THE PROJECT.

6. PERMITS ARE REQUIRED FOR ANY WORK IN THE PUBLIC RIGHT-OF-WAY. THE CONTRACTOR SHALL SECURE ALL PERMITS AND INSPECTIONS REQUIRED FOR THIS CONSTRUCTION.

7. EXPANSION JOINTS REQUIRED, MAXIMUM EVERY 300' IN EXTRUDED-TYPE CURB.

8. AC PAVEMENT TO BE ONE-HALF INCH (1/2") ABOVE LIP OF ALL GUTTERS AFTER COMPACTION, EXCEPT AT SIDEWALK RAMPS AND CROSS GUTTERS.

9. CURB AND GUTTER FOUND TO BE UNACCEPTABLE TO THE CITY OF LAS VEGAS SHALL BE REMOVED AND REPLACED PER STANDARD DRAWING 216.

10. SIDEWALK RAMPS SHALL BE CONSTRUCTED IN EACH QUADRANT OF AN INTERSECTION PER STANDARD DRAWING 235. EXACT LOCATION OF RAMPS MAY BE ADJUSTED IN THE FIELD BY A CITY INSPECTOR.

11. CONTRACTOR SHALL PROVIDE ALL NECESSARY HORIZONTAL AND VERTICAL TRANSITIONS BETWEEN NEW CONSTRUCTION AND EXISTING SURFACES TO PROVIDE FOR PROPER DRAINAGE AND FOR INGRESS AND EGRESS TO NEW CONSTRUCTION. THE EXTENT OF TRANSITIONS TO BE AS SHOWN ON PLANS.

12. ALL GRADING WORK SHALL CONFORM TO THE SOILS REPORT AS PREPARED BY THE SOILS ENGINEER APPROVED BY THE CITY ENGINEER, AND AS SHOWN ON THESE PLANS.

13. EXACT LOCATION OF ALL SAWCUT LINES MAY BE ADJUSTED OR DETERMINED IN THE FIELD BY A CITY OF LAS VEGAS ENGINEER IF LOCATION ON PLANS IS NOT CLEARLY SHOWN, OR EXISTING PAVEMENT CONDITION REQUIRES RELOCATIONS.

14. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT EXISTING PERMANENT SURVEY MONUMENTS. ANY MONUMENTS DISTURBED SHALL BE REPLACED AND ADJUSTED PER AVAILABLE RECORDS IN ACCORDANCE WITH N.R.S. STATUTE NO. 625.550.

15. UTILITY COMPANY METER BOXES, MANHOLE LIDS, VALVE COVERS, ETC., SHALL BE LOCATED OUT OF DRIVEWAYS, DRIVEWAY APRONS, FLOW LINES, AND CROSS GUTTERS UNLESS WRITTEN APPROVAL IS GRANTED BY THE UTILITY COMPANY AND THE CITY ENGINEER.

16. WALL NOTES: ALL WALLS, NEW OR EXISTING, ARE ONLY SHOWN ON CIVIL PLANS FOR THE PURPOSE OF REVIEWING GRADING RELATIONSHIPS; FLOOD CONTROL AND SIGHT DISTANCE AT INTERSECTIONS. NEW WALLS REQUIRE A SEPARATE PERMIT AND INSPECTION BY THE BUILDING DEPARTMENT.

17. ASPHALT MIX DESIGN MUST BE SUBMITTED AND APPROVED BY THE CITY ENGINEER PRIOR TO THE PLACEMENT OF ASPHALT WITHIN CITY RIGHT-OF-WAY.

18. CONTRACTOR SHALL ADJUST ALL NEW AND EXISTING INLETS, VALVE BOXES, MANHOLE RIMS, AND SEWER CLEAN OUTS, ETC. TO FINISH GRADE AS APPLICABLE WHETHER OR NOT THEY ARE SHOWN ON THE PLANS.

19. MATERIALS, HANDLING AND PLACEMENT OF PORTLAND CEMENT CONCRETE SHALL BE IN ACCORDANCE WITH APPLICABLE SECTIONS OF NDOT OR THE CLARK COUNTY AREA SPECIFICATIONS (AS APPLICABLE) AND THE PLANS AND DETAILS SHOWN HEREON.

CONSTRUCTION NOTES

1. ALL BARRICADING AND TEMPORARY TRAFFIC CONTROL DEVICES OR METHODS USED DURING CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE "NEVADA TRAFFIC CONTROL MANUAL," MOST RECENT EDITION, PUBLISHED BY THE STATE OF NEVADA, DEPARTMENT OF HIGHWAYS, EXCEPT AS OTHERWISE PROVIDED IN THE CONTRACT SPECIFICATIONS OR AS REQUIRED BY THE ENGINEER.

2. AT THE TIME OF PRE-CONSTRUCTION CONFERENCE, THE CONTRACTOR SHALL FURNISH, FOR APPROVAL, A TRAFFIC BARRICADING PLAN AND METHOD OF MAINTAINING PUBLIC CONVEYANCE AND SAFETY THROUGHOUT THE CONSTRUCTION AREA. TRAFFIC BARRICADING PLANS SHALL COMPLY WITH APPLICABLE PORTIONS OF SECTIONS 624 AND 625 OF THE STANDARD SPECIFICATIONS, THE TRAFFIC CONTROL MANUAL AND APPLICABLE CITY ORDINANCES.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERTICAL ADJUSTMENT OF EXISTING SANITARY, WATER AND STORM SEWER MANHOLES TO THE FINAL FINISH GRADES AS NOTED ON THE CONTRACT DRAWINGS, AND IN ACCORDANCE WITH SECTION 209.03 OF THE "STANDARD SPECIFICATIONS," AND ANY VERTICAL ADJUSTMENTS OF WATER VALVE BOXES AND OTHER APPURTENANCES SHALL BE IN ACCORDANCE WITH THE DETAILS SHOWN ON THE CONTRACT DRAWINGS.

4. NOTICE: GRADING AUTHORIZED ONLY AFTER PERMITTEE'S FULL COMPLIANCE WITH FEDERAL ENDANGERED SPECIES ACT.

5. THE DESIGN GRADE (DG) INDICATED ON THESE PLANS IS FOR VERTICAL ELEVATION DESIGN CALCULATION PURPOSES AND DOES NOT NECESSARILY REPRESENT THE FINISH IMPROVEMENT GRADES @ CENTERLINE. (I.E. THRU MEDIAN AREAS).

6. ALL EXISTING UTILITY CROSSINGS MUST BE VERIFIED PRIOR TO CONSTRUCTION OF ANY MAIN LINES OR LATERALS THAT MAY BE ADVERSELY EFFECTED. ANY DISCREPANCIES IN LOCATION AND/OR ELEVATION MUST BE PROVIDED TO THE ENGINEER FOR ACCEPTANCE PRIOR TO CONSTRUCTION.

7. 48 HOURS PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL CONTACT:

LAS VEGAS VALLEY WATER DISTRICT	PHONE	870-2011
NEVADA POWER COMPANY	PHONE	1-800-227-2600
SPRINT	PHONE	1-800-227-2600
SOUTHWEST GAS CORPORATION	PHONE	365-2296
KERN RIVER GAS	PHONE	801-584-6762

CITY OF LAS VEGAS GRADING NOTES

1. IN THE EVENT THAT ANY UNFORESEEN CONDITIONS NOT COVERED BY THESE NOTES ARE ENCOUNTERED DURING GRADING OPERATIONS, THE OWNER/ENGINEER SHALL BE IMMEDIATELY NOTIFIED FOR DIRECTION.

2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM ALL NECESSARY CUTS AND FILLS WITHIN THE LIMITS OF THIS PROJECT AND THE RELATED OFF-SITE WORK, SO AS TO GENERATE THE DESIRED SUBGRADE, FINISH GRADES AND SLOPES SHOWN.

3. CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ALL EXCAVATION. ADEQUATE SHORING SHALL BE DESIGNED AND PROVIDED BY THE CONTRACTOR TO PREVENT UNDERMINING OF ANY ADJACENT FEATURES OR FACILITIES AND/OR CAVING OF EXCAVATION.

4. THE CONTRACTOR IS WARNED THAT AN EARTHWORK BALANCE WAS NOT NECESSARILY THE INTENT OF THIS PROJECT. ANY ADDITIONAL MATERIAL REQUIRED OR LEFTOVER MATERIAL FOLLOWING EARTHWORK OPERATIONS BECOMES THE RESPONSIBILITY OF THE CONTRACTOR.

5. THE GRADING CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH THE OWNER TO PROVIDE FOR THE REQUIREMENTS OF THE PROJECT STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND ASSOCIATED PERMIT.

6. CONTRACTOR SHALL GRADE TO THE LINES AND ELEVATIONS SHOWN ON THE PLANS WITHIN THE FOLLOWING HORIZONTAL AND VERTICAL TOLERANCES AND DEGREES OF COMPACTION, IN THE AREAS INDICATED:

	HORIZONTAL	VERTICAL COMPACTION	
A. PAVEMENT AREA SUBGRADE	0.1'+	+0.0' TO -0.1'	SEE SOILS REPORT
B. ENGINEERED FILL	0.5'+	+0.1' TO -0.1'	SEE SOILS REPORT

COMPACTION TESTING WILL BE PERFORMED BY THE OWNER OR HIS REPRESENTATIVE.

7. ALL CUT AND FILL SLOPES SHALL BE PROTECTED UNTIL EFFECTIVE EROSION CONTROL HAS BEEN ESTABLISHED.

8. THE USE OF POTABLE WATER WITHOUT A SPECIAL PERMIT FOR BUILDING OR CONSTRUCTION PURPOSES INCLUDING CONSOLIDATION OF BACKFILL OR DUST CONTROL IS PROHIBITED. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR CONSTRUCTION WATER.

9. THE CONTRACTOR SHALL MAINTAIN THE STREETS, SIDEWALKS AND ALL OTHER PUBLIC RIGHT-OF-WAY IN A CLEAN, SAFE AND USABLE CONDITION. ALL SPILLS OF SOIL, ROCK OR CONSTRUCTION DEBRIS SHALL BE PROMPTLY REMOVED FROM THE PUBLICLY OWNED PROPERTY DURING CONSTRUCTION AND UPON COMPLETION OF THE PROJECT. ALL ADJACENT PROPERTY, PRIVATE OR PUBLIC, SHALL BE MAINTAINED IN A CLEAN, SAFE AND USABLE CONDITION.

10. IN THE EVENT THAT ANY TEMPORARY CONSTRUCTION ITEM IS REQUIRED THAT IS NOT SHOWN ON THESE DRAWINGS, THE OWNER AGREES TO PROVIDE AND INSTALL SUCH ITEM AT HIS OWN EXPENSE AND AT THE DIRECTION OF THE CITY ENGINEER. TEMPORARY CONSTRUCTION INCLUDES DITCHES, BERMS, ROAD SIGNS AND BARRICADES, ETC.

LEGEND AND ABBREVIATION

- (1) DETAIL DRAWING NUMBER
- (1/-) DETAIL DRAWING NUMBER DRAWN ON SAME SHEET
- (1/7) DETAIL DRAWING NUMBER WITH REFERENCE TO THE SHEET IT IS DRAWN ON
- (1/S) STANDARD DRAWING NUMBER (S) PER SUMMERLIN IMPROVEMENT STANDARDS, OR PER OTHER STANDARDS AS NOTED IN ABBREVIATION TABLE
- (1/I) INDICATES CONSTRUCTION NOTE
- (A/I) INDICATES REMOVAL NOTE
- (1) INDICATES CURVE NUMBER
- INDICATES SEWER MANHOLE IN PROFILE
- INDICATES STORM DRAIN MANHOLE IN PROFILE
- (60.5) TC EXIST. SPOT ELEVATION
- STUB & CAP PIPE
- POLE

EMBANKMENT TOP YYY PROPOSED; BOTTOM YYY BY SEPARATE CONTRACT; YYY EXISTING

ABBREVIATION

I	=	IMPROVEMENTS
W	=	WATER
S	=	SEWER OR SUMMERLIN IMPROVEMENT STANDARDS
INV	=	INVERT
FUT	=	FUTURE
SD	=	STORM DRAIN
SL	=	STREET LIGHTING
SIG	=	TRAFFIC SIGNAL
SMH	=	SEWER MANHOLE
SDMH	=	STORM DRAIN MANHOLE
CC	=	CLARK COUNTY
CLV	=	CITY OF LAS VEGAS
LVVWD	=	LAS VEGAS VALLEY WATER DISTRICT
NDOT	=	NEVADA DEPT. OF TRANSPORTATION STANDARD PLANS, JANUARY 1999
TR	=	STREET LIGHT TRENCH (SEE ELECTRICAL PLANS)
DG	=	DESIGN GRADE
TC	=	TOP OF CURB
FG	=	FINISHED GRADE
MOC	=	MIDDLE OF CURVE
UDS	=	UNIFORM STANDARD DRAWINGS-CLARK COUNTY AREA (LATEST EDITION)
DCSWCS	=	DESIGN AND CONSTRUCTION STANDARDS FOR WASTEWATER COLLECTION SYSTEMS
UDACS	=	UNIFORM DESIGN AND CONSTRUCTION STANDARDS FOR WATER DISTRIBUTION SYSTEMS

NOTE: LEGEND & ABBREVIATIONS IN THE "SUMMERLIN IMPROVEMENT STANDARDS", LATEST EDITION, WILL BE UTILIZED FOR ANY LEGEND & ABBREVIATION REQUIRED WHICH ARE NOT SHOWN.

STREET QUANTITIES (PUBLIC)

STREETS			STREET LIGHTS		
4" A.C. PAVEMENT	–	S.Y.	SINGLE ARM ST. LT.	–	EA.
TYPE II BASE	–	C.Y.	DOUBLE ARM ST. LT.	–	EA.
6" TYPE "L" C & G	–	L.F.	CONDUIT	–	L.F.
TYPE "A" CURBS	–	L.F.	**IRRIGATION**		
EXCAVATION	–	C.Y.	IRRIGATION SLEEVES	–	L.F.
EMBANKMENT	–	C.Y.	1 1/2" METER W/ RPPA	–	E.A.
REMOVE & STOCKPILE EX. RIPRAP LOCATION TO BE DETERMINED BY OWNER	–	C.Y.			
6" D50 RIPRAP	–	C.Y.			
8" D50 RIPRAP	–	C.Y.			

CONSTRUCTION NOTES

IMPROVEMENTS

- (1/I) INSTALL "A" TYPE ISLAND CURB (S-50/S)
- (2/I) INSTALL 6" "L" TYPE CURB & GUTTER (S-47/S)
- (3/I) INSTALL A.C. PAVEMENT PER TYPICAL STREET SECTION DETAILS
- (4/I) INSTALL HANDICAP RAMP CURB DEPRESSION (S-75/S)
- (5/I) VERIFY LOCATION AND ELEVATION OF EXISTING ROADWAY IMPROVEMENT AND MATCH TO EXISTING CONDITION.
- (6/I) ADJUST EXISTING FACILITY TO GRADE
- (7/I) SAWCUT AND REMOVE EXISTING A.C.
- (8/I) INSTALL CONCRETE BUS PULLOUT (234.1/USD)
- (9/I) INSTALL CONCRETE ENCASEMENT (5/13)

WATER

- (1/W) INSTALL 12" DIA. GATE VALVE & VALVE BOX (8/UDS)
- (2/W) INSTALL 6" DIA. GATE VALVE & VALVE BOX (8/UDS)
- (3/W) INSTALL CAP AND 2" MANUAL BLOW-OFF ASSEMBLY (4/UDS)
- (4/W) INSTALL STANDARD FIRE HYDRANT ASSEMBLY (7/UDS)
- (5/W) ADJUST EXISTING WATER LINE APPURTENANCES TO FINISHED GRADE
- (6/W) REMOVE CAP & CONNECT TO EXISTING WATER LINE (CONTRACTOR TO VERIFY SIZE AND LOCATION OF EXISTING WATER LINE). IF DISCREPANCY EXISTS, NOTIFY ENGINEER PRIOR TO CONSTRUCTION.
- (7/W) INSTALL 11-1/4° BEND
- (8/W) INSTALL 22-1/2° BEND
- (9/W) INSTALL 45° BEND
- (10/W) INSTALL 90° BEND
- (11/W) INSTALL 12" CROSS

SEWER

- (1/S) INSTALL 48" DIA. SEWER MANHOLE (SD 1-8/DCSWCS)
- (2/S) INSTALL TEMPORARY PLUG AND CAP
- (3/S) REMOVE CAP & CONNECT TO EXISTING SEWER LINE (CONTRACTOR TO VERIFY SIZE AND LOCATION OF EXISTING SEWER LINE).
- (4/S) INSTALL 60" DIA. SEWER MANHOLE (SD 1-8/DCSWCS)

STORM DRAIN

- (1/SD) INSTALL TYPE I ACCESS STORM DRAIN MANHOLE (403/USD)
- (2/SD) INSTALL TYPE II STORM DRAIN MANHOLE (405/USD)
- (3/SD) INSTALL TYPE III STORM DRAIN MANHOLE (405/USD)
- (4/SD) INSTALL MODIFIED TYPE "C" DROP INLET (4/13)
- (5/SD) INSTALL TEMPORARY PLUG
- (6/SD) CONNECT TO EXISTING STORM DRAIN LINE (CONTRACTOR TO VERIFY SIZE, INVERT, AND LOCATION OF EXISTING STORM DRAIN LINE)
- (7/SD) CONCRETE COLLAR

IRRIGATION

- (1/IR) BANK "A"; 1-6" & 2-4" SCHD. 40 PVC (U-18/S)
- (2/IR) BANK "B"; 2-4" SCHD 40 PVC (U-18/S)

DEVIATIONS FROM STANDARDS

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

Avoid cutting underground utility lines. It's costly. **Call before you Dig. 1-800-227-2600** UNDERGROUND SERVICE ALERT (USA)

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY. CALL BEFORE YOU DO OVERHEAD. CALL 1-702-593-6111

LOCATION

LYING WITHIN SECTIONS 34 TOWNSHIP 20 SOUTH, RANGE 58 EAST, M.D.M., CITY OF LAS VEGAS, CLARK COUNTY, NEVADA.

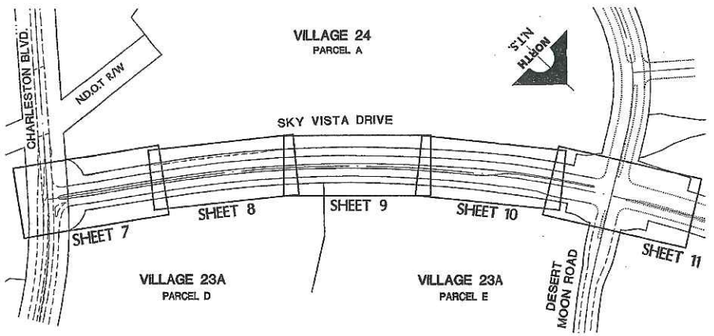
SUMMERLIN STREET CLASSIFICATION

SKY VISTA DRIVE: NEIGHBORHOOD COLLECTOR LEVEL 1 WITH BIKE LANES

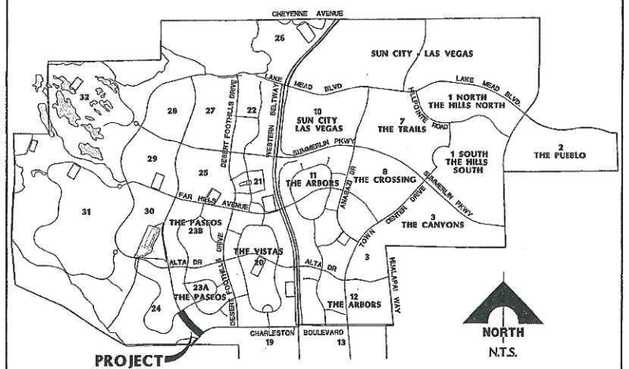
NOTES

SEE SHEET 4 FOR LAS VEGAS VALLEY WATER DISTRICT NOTES.
SEE SHEET 4 FOR LAS VEGAS FIRE & RESCUE GENERAL NOTES.
SEE SHEET 5 FOR CITY OF LAS VEGAS SEWER NOTES.
SEE SHEET 16 FOR CITY OF LAS VEGAS TRAFFIC NOTES.
SEE SHEET 17 FOR CITY OF LAS VEGAS STREETLIGHT NOTES.

LOCATION/SHEET INDEX MAP



VICINITY MAP



INDEX OF DRAWINGS

1. COVER SHEET
2. PROJECT DATA SHEET
3. HORIZONTAL CONTROL PLAN
4. WATER MASTER PLAN
5. SEWER MASTER PLAN
6. STORM DRAIN MASTER PLAN
7. SKY VISTA DRIVE PLAN AND PROFILE
8. SKY VISTA DRIVE PLAN AND PROFILE
9. SKY VISTA DRIVE PLAN AND PROFILE
10. SKY VISTA DRIVE PLAN AND PROFILE
11. SKY VISTA DRIVE PLAN AND PROFILE
12. TYPICAL SECTIONS
13. MISCELLANEOUS DETAILS
14. LATERAL PROFILES I
15. LATERAL PROFILES II
* 16. SIGNAGE AND STRIPING PLAN
* 17. MASTER CONDUIT AND ELECTRICAL PLAN I
* 18. MASTER CONDUIT AND ELECTRICAL PLAN II
* 19. MASTER CONDUIT AND ELECTRICAL PLAN III

* NOT-A-PART OF DRAINAGE SUBMITTAL

APPROVAL:

LAS VEGAS VALLEY WATER DISTRICT — DATE

CLV DRAWING NO.

BERT L. HUGHES, No. 7986, STATE OF NEVADA, REGISTERED PROFESSIONAL ENGINEER, 03/22/04

NO.	DESCRIPTION	REV. DATE	DATE AGEN. APP.	DATE SIGNA. APP.
2	ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION	03/22/04		

DESIGN:
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G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE (702) 804-2000 • FAX: (702) 804-2099
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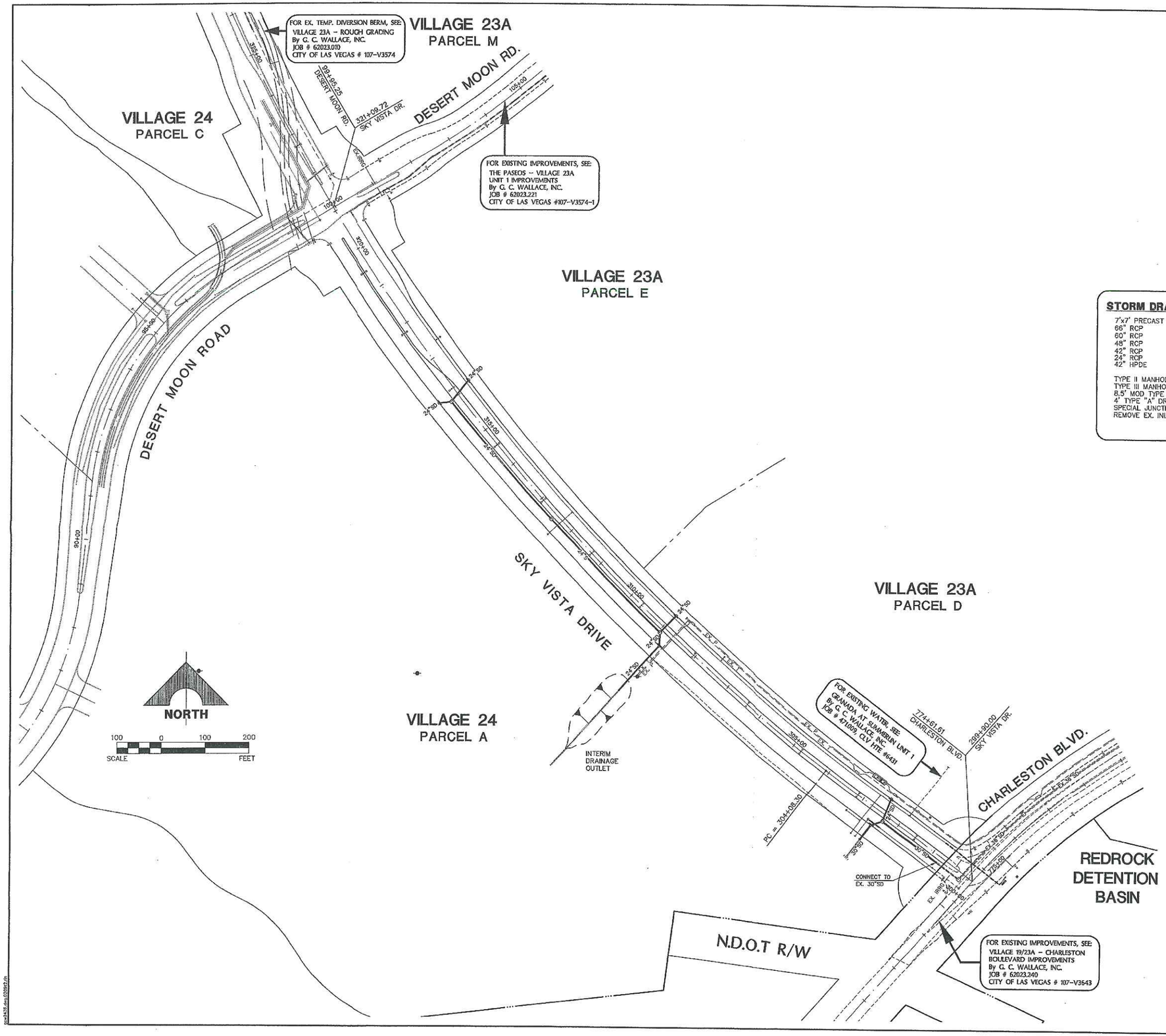
ISSUE DATE: 03/22/04

SUMMERLIN
VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS
PROJECT DATA SHEET

JOB NO. 62A.24.220

SHEET 2
2 OF 19 SHTS



STORM DRAIN QUANTITIES (PUBLIC)

7'x7' PRECAST RCB	---	LF
66" RCP	---	LF
60" RCP	---	LF
48" RCP	---	LF
42" RCP	---	LF
24" RCP	---	EA
42" HPDE	---	EA
TYPE II MANHOLE	---	EA
TYPE III MANHOLE	---	EA
8.5' MOD TYPE "C" DROP INLET	---	EA
4' TYPE "A" DROP INLET	---	EA
SPECIAL JUNCTION STRUCTURE	---	EA
REMOVE EX. INLET STRUCTURE	---	EA

CLV DRAWING NO.

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
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ISSUE EDITOR:
PLOT DATE: 03-17-04
PLOT TIME: 14:49:10

REV	DATE	DESCRIPTION	DATE	AGEN. APP	DATE	CCW. APP

ISSUE DATE: 03/22/04 ISSUE FOR AGENCY REVIEW – NOT FOR CONSTRUCTION

SUMMERLIN
VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS
STORM DRAIN MASTER PLAN

JOB NO. 62A.24.220

SHEET
6
6 OF 19 SHTS

FOR EXISTING IMPROVEMENTS, SEE:
VILLAGE 19/23A – CHARLESTON BOULEVARD IMPROVEMENTS
By G. C. WALLACE, INC.
JOB # 62023.240
CITY OF LAS VEGAS # 107–V3643

RED ROCK DETENTION BASIN
ROAD ID NO 164-030-96-001
UNINCORPORATED

CHARLESTON BLVD.

VILLAGE 24
PARCEL A

SKY VISTA DRIVE

VILLAGE 23A
PARCEL D

FOR EXISTING WATER, SEE:
GRANADA AT SUMMERLIN UNIT 1
By G. C. WALLACE, INC.
JOB # 471009, CLV HTE #6431

FOR EX. ROUGH GRADING, SEE:
VILLAGE 23A – ROUGH GRADING
By G. C. WALLACE, INC.
JOB # 62023.010
CITY OF LAS VEGAS # 107–V3574

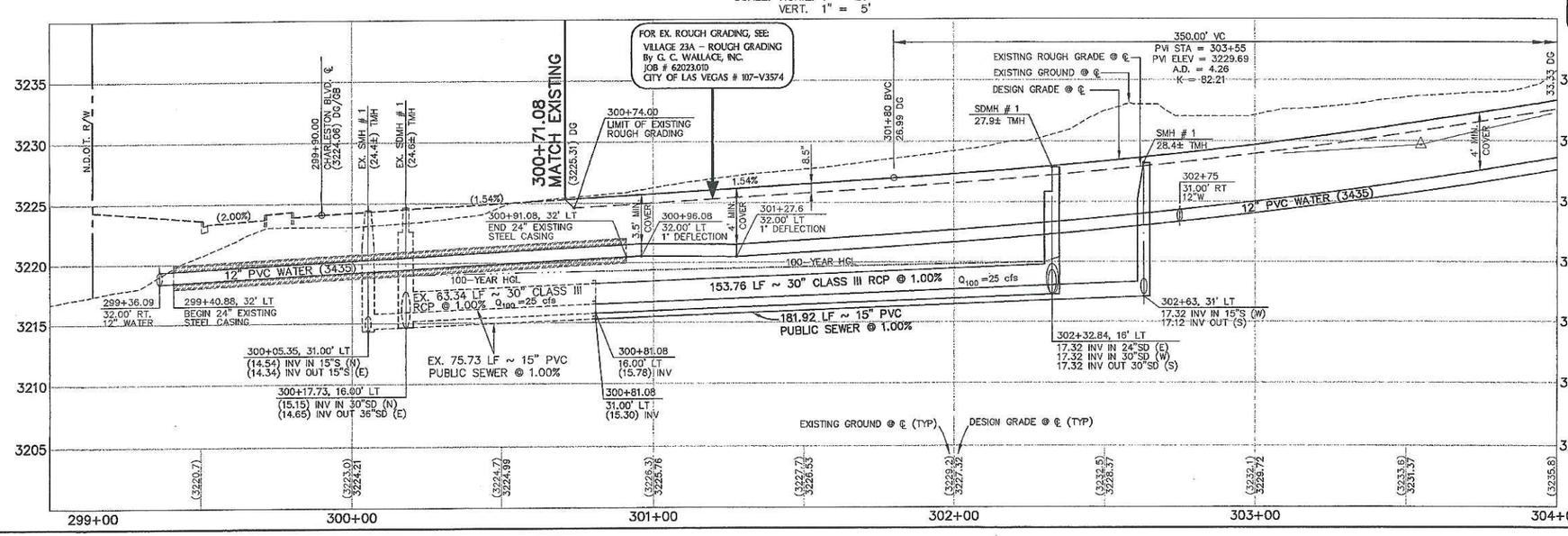
MATCHLINE STATION 304+00 SEE SHEET 8

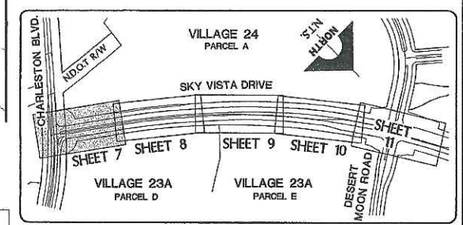
NORTH

SCALE 20 0 20 40 FEET

SKY VISTA DRIVE

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'





NOTE

THIS SET OF DRAWINGS IS BASED UPON NAVD 83 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

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APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE

CLV DRAWING NO.

ISSUE DATE 03/22/04 ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION

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DATE	DESCRIPTION	DATE ASBL	APP DATE	DSN APP

BRET L. HUMPHREYS — NEVADA — No. 10278 — PROFESSIONAL ENGINEER — STATE OF NEVADA — DATE: 2/19/04

G. C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE (702) 804-2000 • FAX (702) 804-2299
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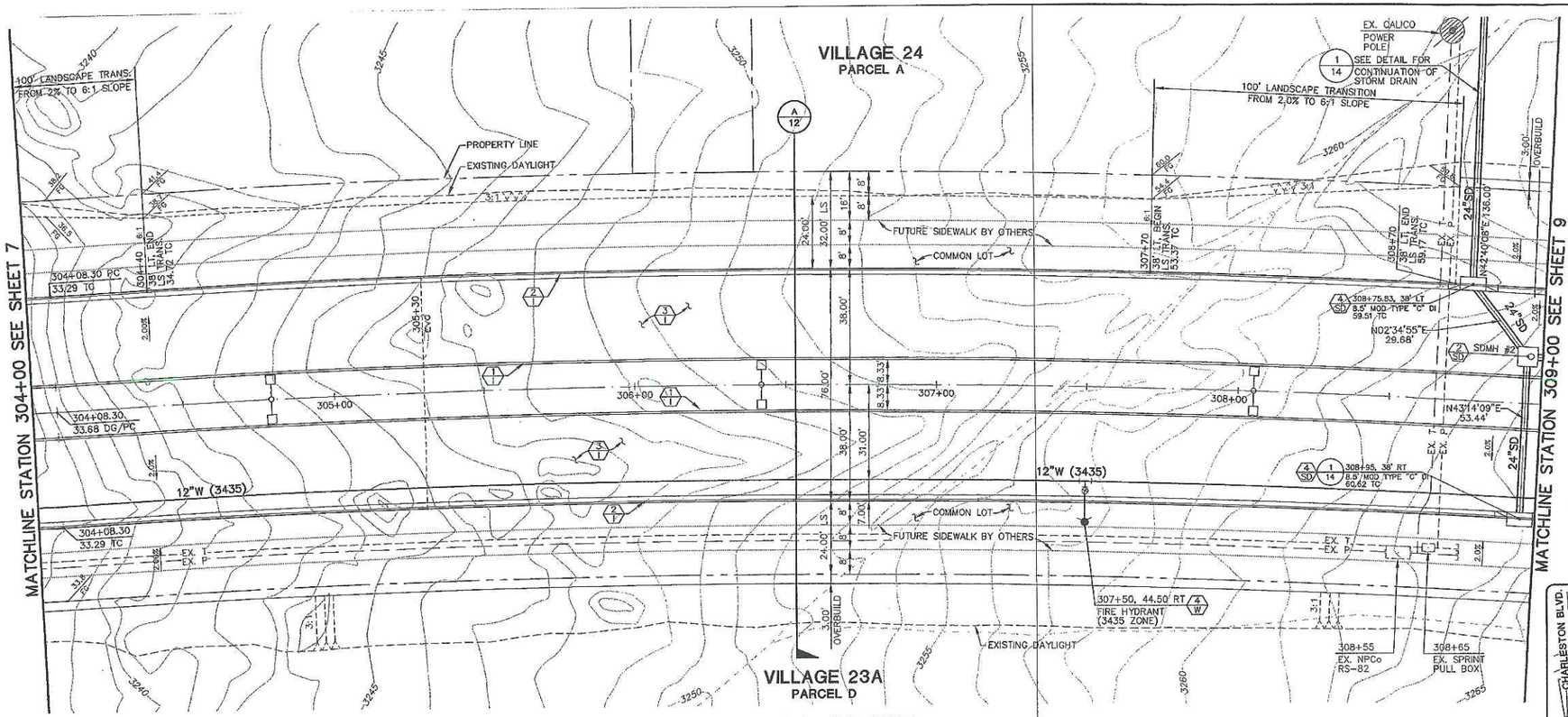
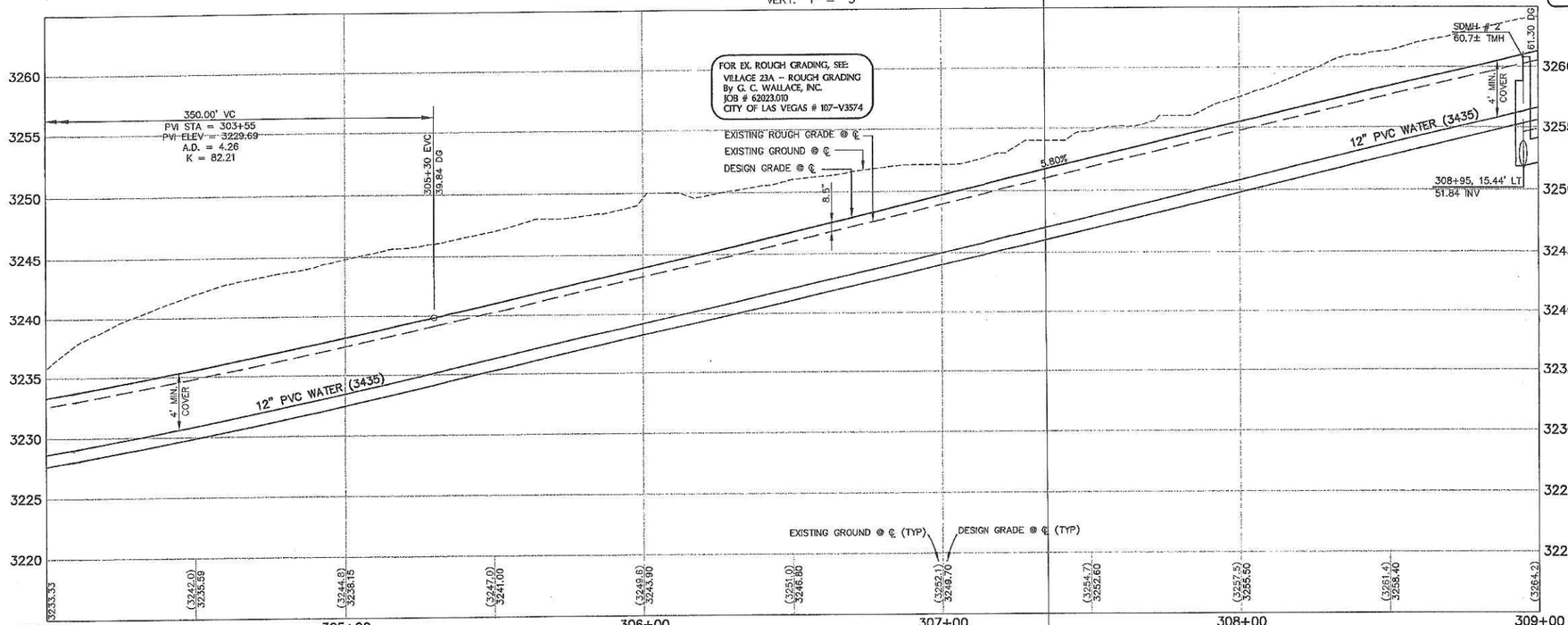
SUMMERLIN
VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS
SKY VISTA DRIVE
PLAN AND PROFILE

JOB NO. 62A.24.220

SHEET 7
7 OF 19 SHTS





NOTE

THIS SET OF DRAWINGS IS BASED UPON NAVD 88 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. 0388 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

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APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE

CLV DRAWING NO.

ENGINEER - STATE OF NEVADA
BURT HARRISON
No. 7886
PROFESSIONAL ENGINEER
3/16/04

REV.	DATE	DESCRIPTION	DATE	AGEN.	APP.	DATE	SCH.	APP.

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PLOT DATE: 03-18-04
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G.C. WALLACE, INC.
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1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
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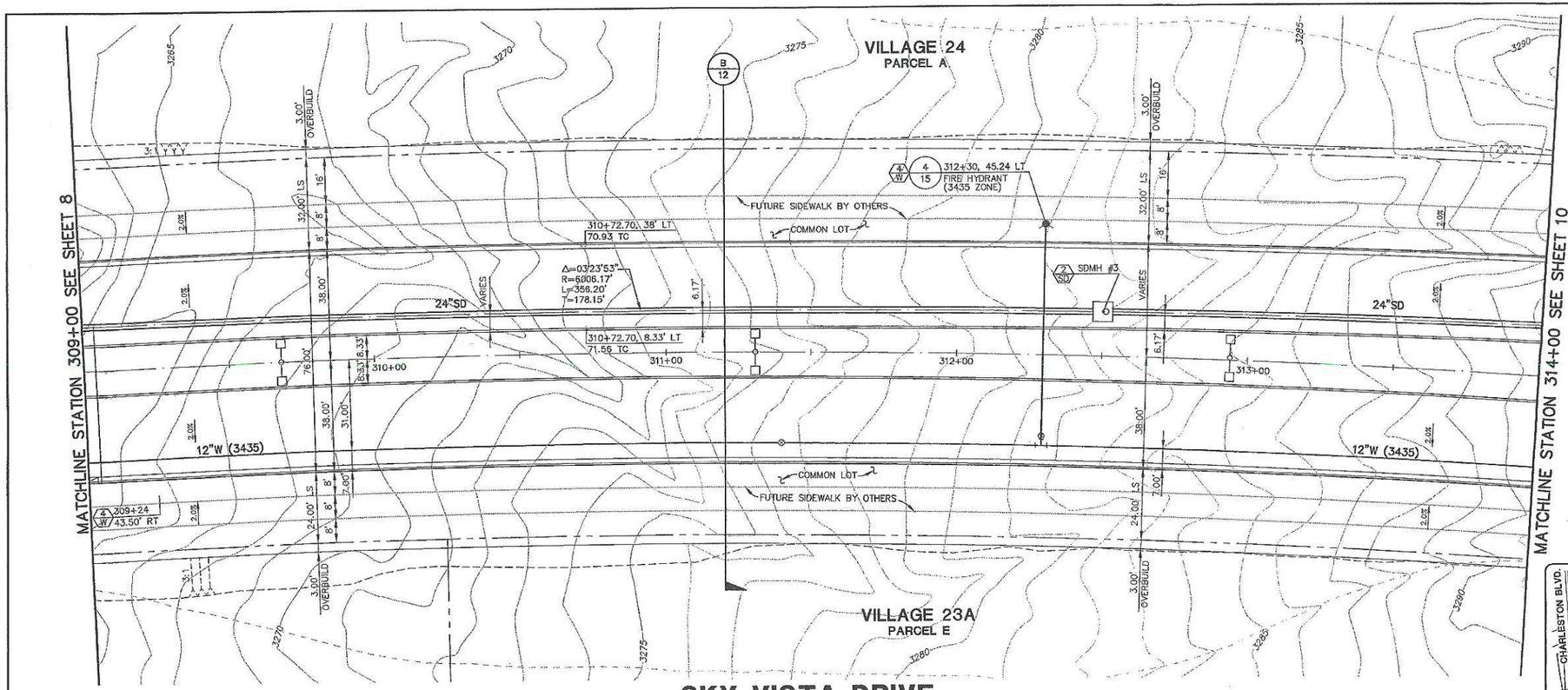
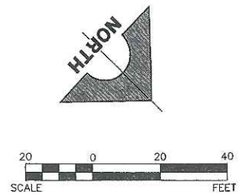
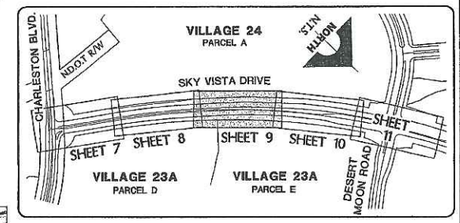
F:\v24\SkyVista\Civil\Xmpr\SVD-d005.dwg

SUMMERLIN
VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS
SKY VISTA DRIVE
PLAN AND PROFILE
JOB NO. 62A.24.220
SHEET 8
8 OF 19 SHTS

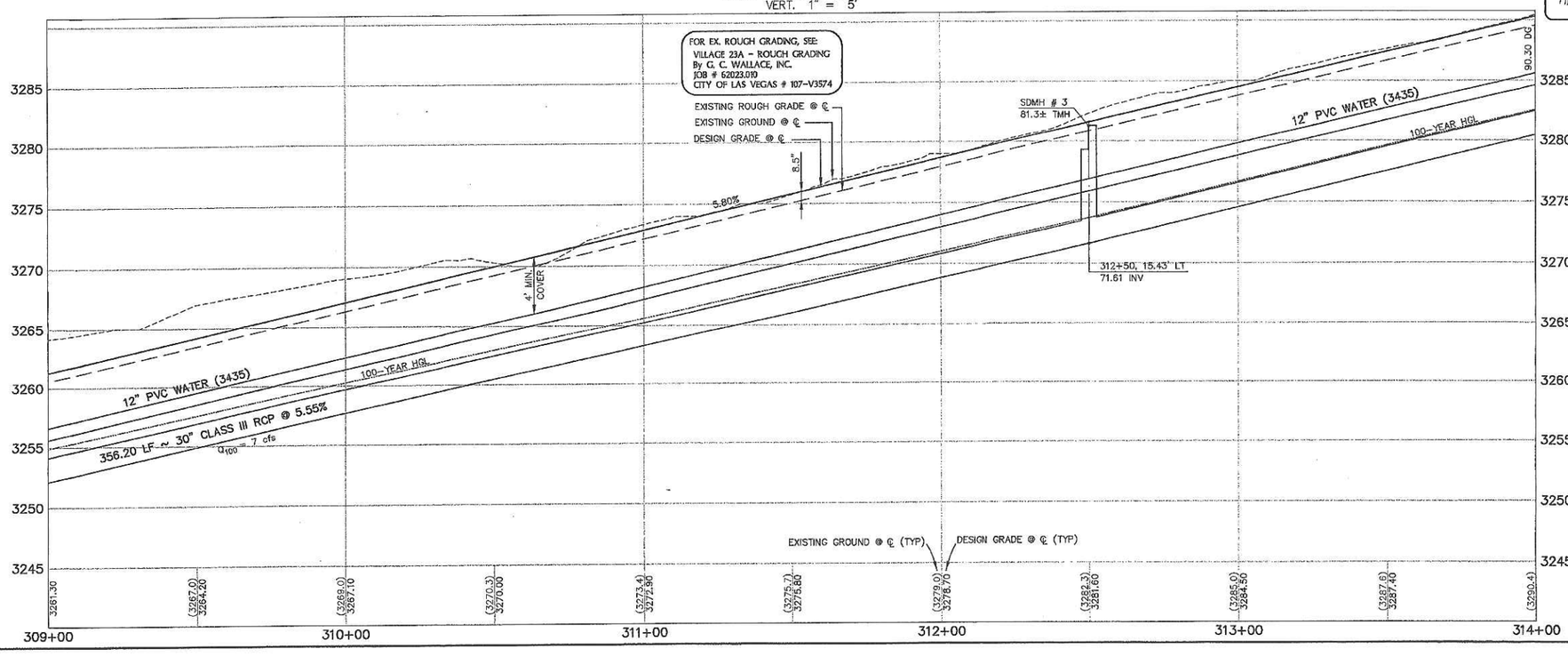






SKY VISTA DRIVE

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'



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APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE

CLV DRAWING NO.

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299

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PLOT DATE: 03-18-04
PLOT TIME: 11:10:58

REV	DATE	DESCRIPTION	DATE	AGEN. APP.	DATE	GCW. APP.

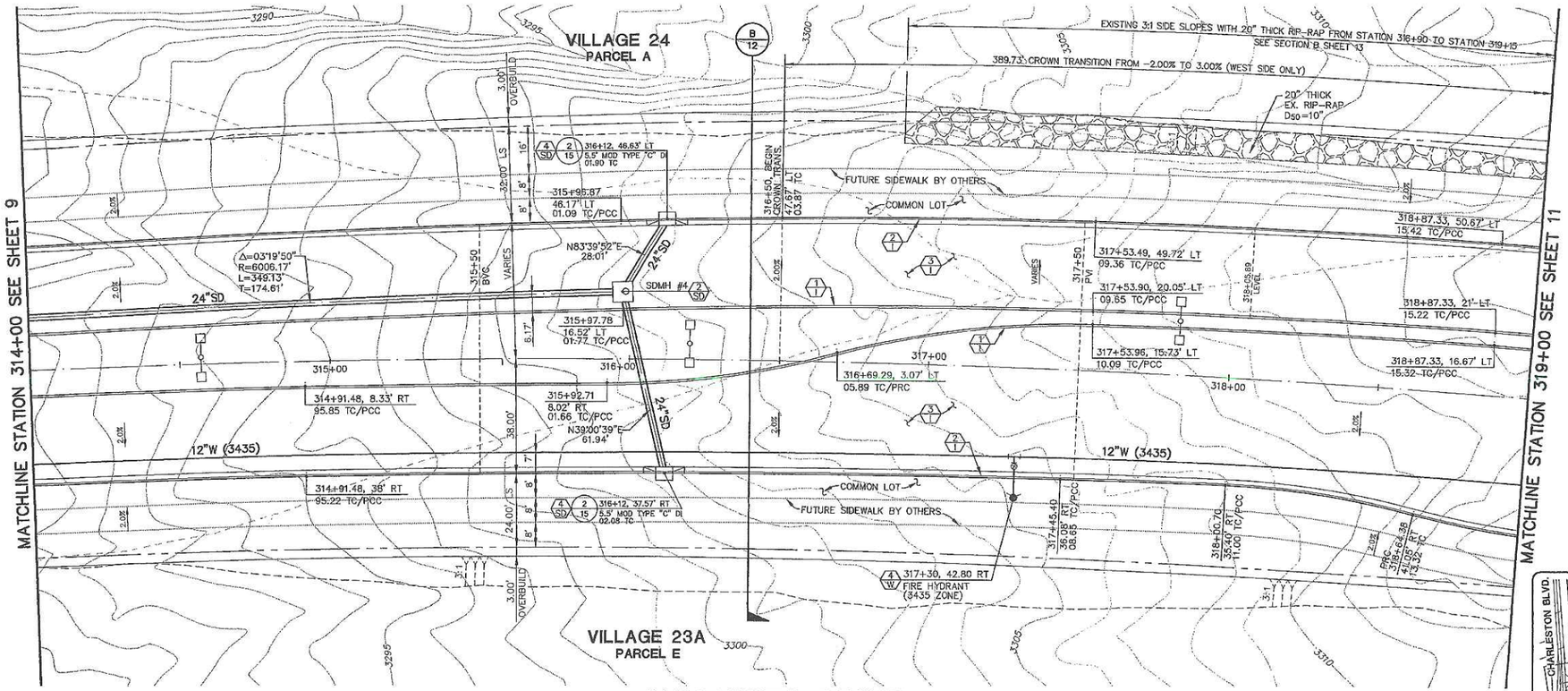
DATE: 2/15/04

ISSUE DATE: 03/22/04 ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION

SUMMERLIN
VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS
SKY VISTA DRIVE
PLAN AND PROFILE

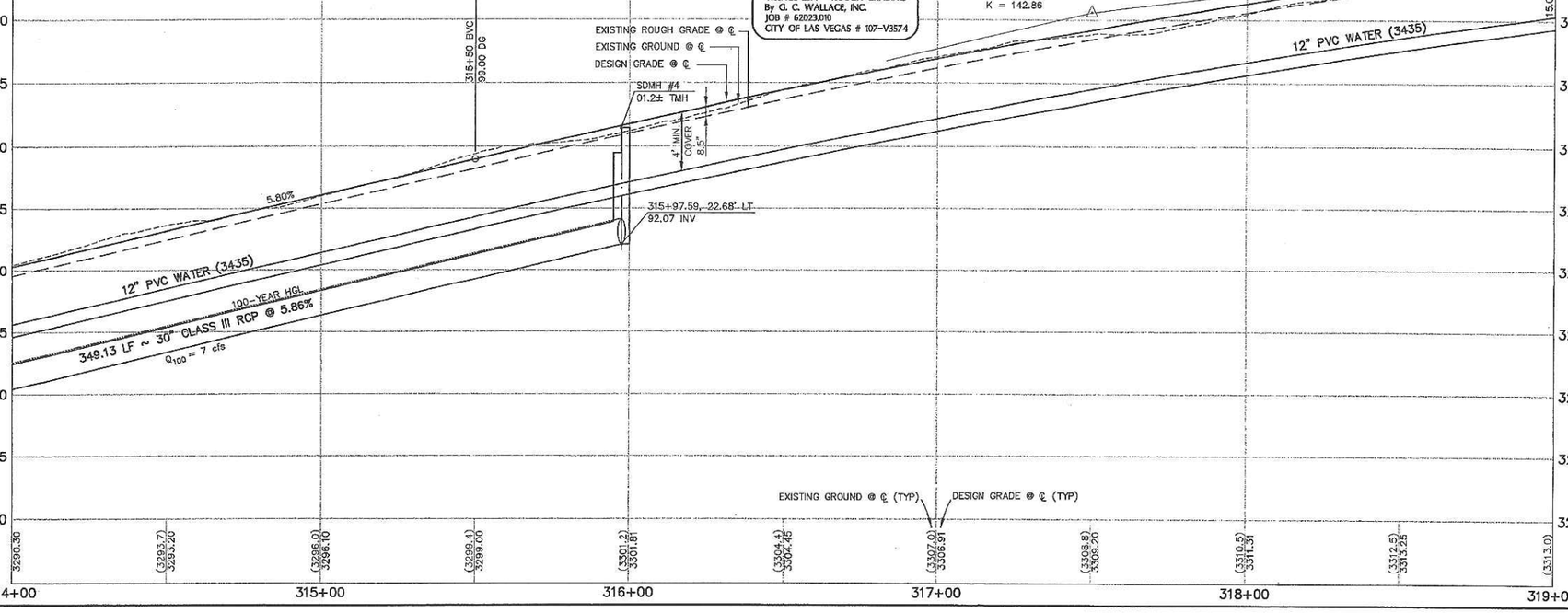
JOB NO. 62A.24.220

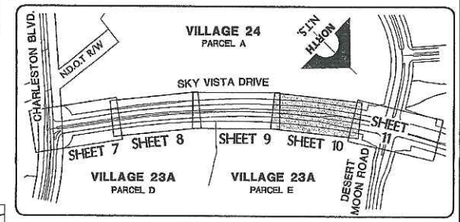
SHEET
9
9 OF 19 SHTS

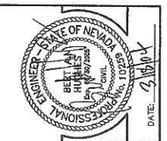


SKY VISTA DRIVE

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'







NOTE

THIS SET OF DRAWINGS IS BASED UPON NAVD 88 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. D388 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA





APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE

CLV DRAWING NO.

ISSUE DATE: 03/22/04 ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DATE	AGEN	APP	DATE	GCW	APP

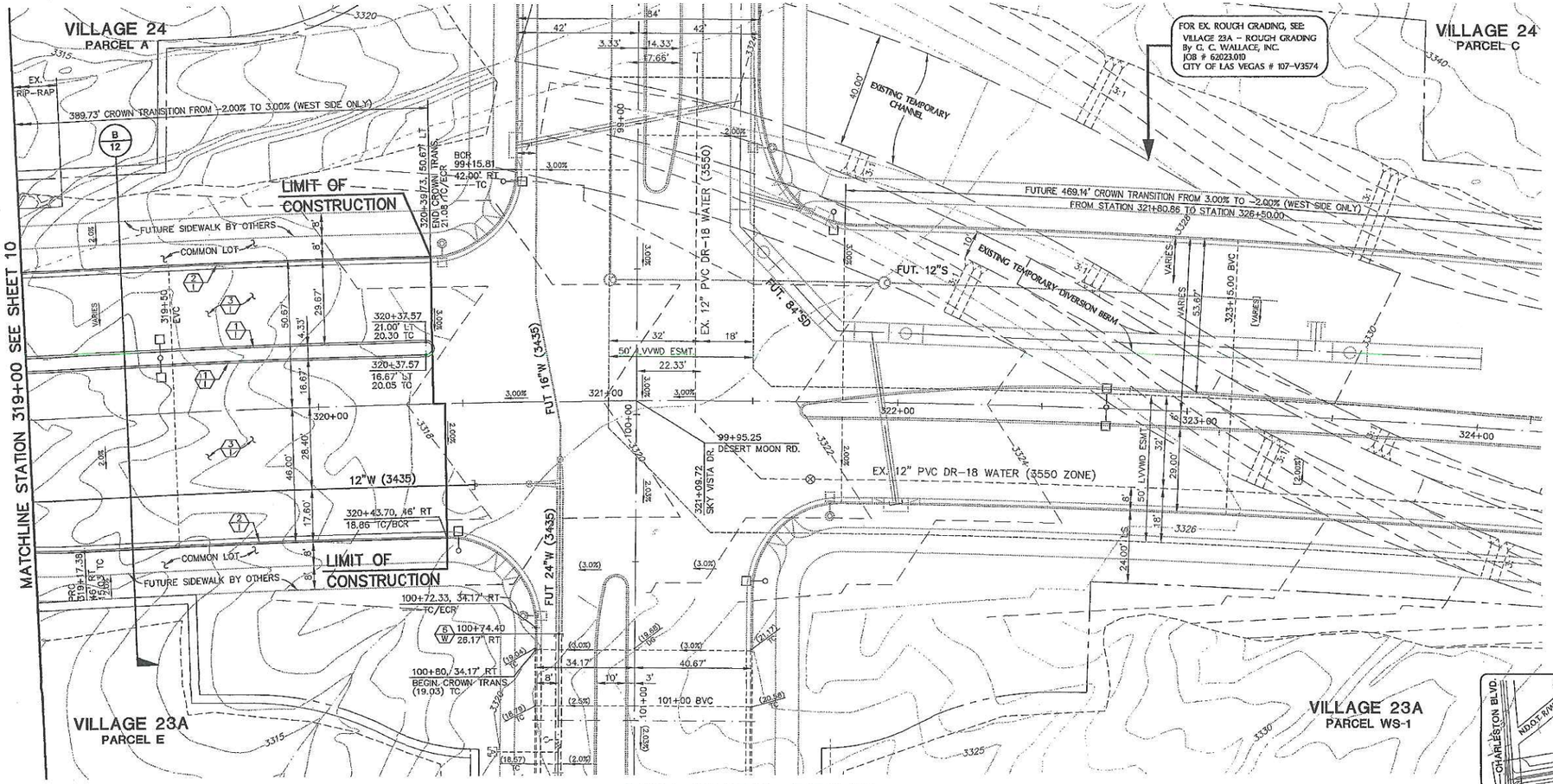
DESIGN:
DRAWN:
CHECK:
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 03-18-04
PLOT TIME: 11:16:16

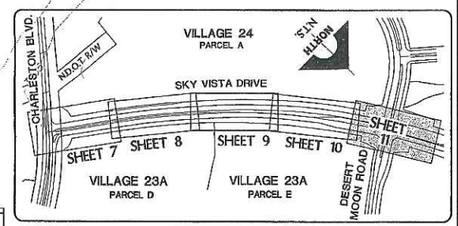
G. C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE (702) 804-2000 • FAX: (702) 804-2099
F:\V24\SkyVista\dwg\Xmpr\SVD-01G.dwg

SUMMERLIN
VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS
SKY VISTA DRIVE
PLAN AND PROFILE

JOB NO. 62A.24220

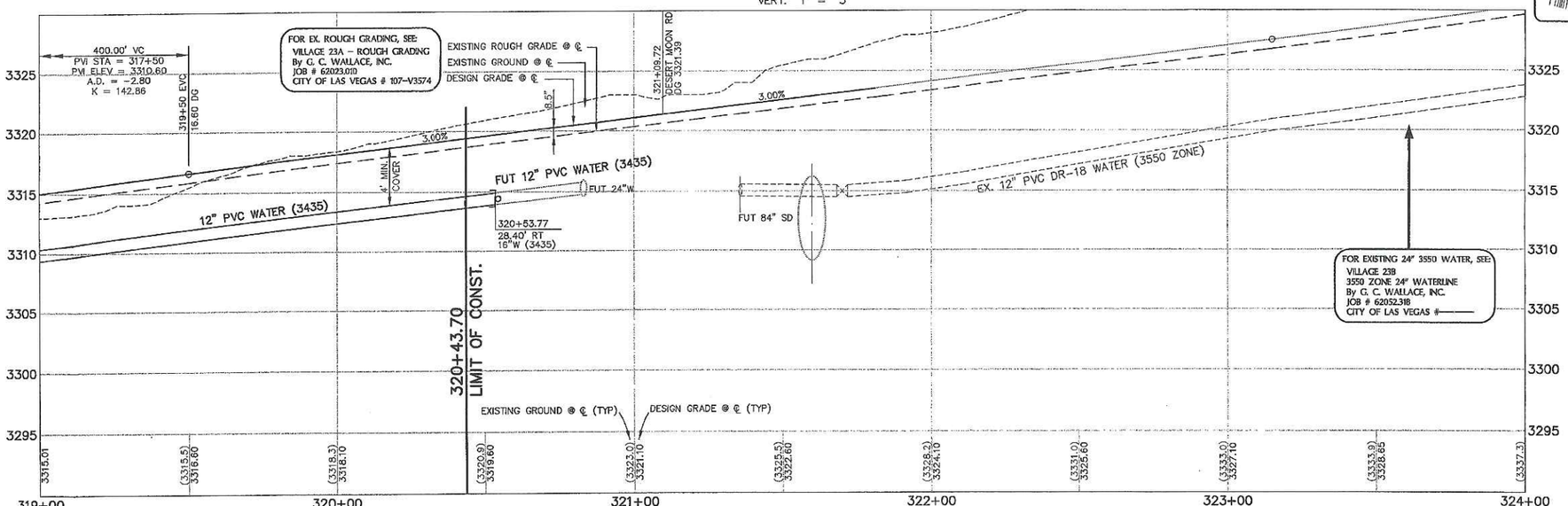
SHEET 10
10 OF 19 SHTS





SKY VISTA DRIVE

SCALE: HORIZ. 1" = 20'
VERT. 1" = 5'



NOTE

THIS SET OF DRAWINGS IS BASED UPON NAVD 88 DATUM. PREVIOUS DRAWINGS MAY BE BASED ON OTHER DATUM. CARE SHOULD BE OBSERVED WHEN UTILIZING THIS SET OF DRAWINGS.

BENCHMARK

BM #	DESC.	NAVD 88 DATUM	NAVD 29 DATUM
CLV BM No. D368 3	U.S.C.& G.S. BRASS DISC SET IN ROCK ON THE EAST SIDE OF CHARLESTON BOULEVARD AND SOUTH OF THE RED ROCK DETENTION BASIN.	3246.71 (FEET)	989.599 (METERS)

BASIS OF BEARINGS

NORTH 89°45'05" EAST BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 35, TOWNSHIP 20 SOUTH, RANGE 59 EAST, M.D.M., AS SHOWN BY MAP ON FILE IN FILE 91, PAGE 28 OF PARCEL MAPS IN THE CLARK COUNTY RECORDER'S OFFICE, CLARK COUNTY, NEVADA

Avoid cutting underground utility lines. It's costly. **Call before you Dig. 1-800-227-2600** (UNDERGROUND SERVICE ALERT (USA))

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY. CALL BEFORE YOU DO OVERHEAD. CALL 1-702-593-6111

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE

CLV DRAWING NO.

ENGINEER – STATE OF NEVADA – BERT L. HUGHES – No. 10787 – PROFESSIONAL

NO.	DESCRIPTION	DATE	AGEN. APP	DATE	CONS. APP	DATE
1	ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION	03/22/04				

DESIGN:
DRAWN:
CHECK:
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 03-18-04
PLOT TIME: 07:58:59

G. C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE (702) 804-2000 • FAX (702) 804-2299

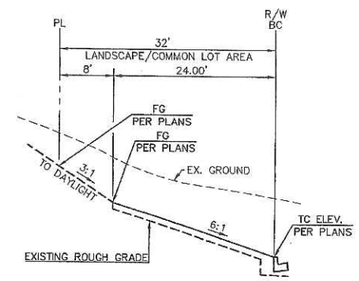
F:\v24\Sheffield\dwg\Vegas\ASTC-SV01.dwg

ISSUE DATE: 03/22/04

SUMMERLIN
VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS
SKY VISTA DRIVE
PLAN AND PROFILE

JOB NO. 62A.24.220

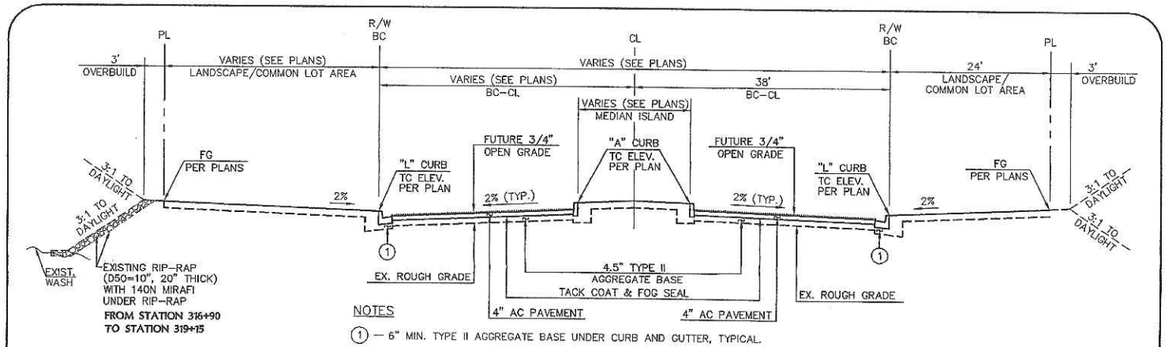
SHEET 11
11 OF 19 SHTS



SKY VISTA DRIVE
EXISTING LANDSCAPE GRADING
FOR DEEP CUTS

SEE PLAN AND PROFILE SHEETS FOR LOCATIONS
NOT TO SCALE

C
–



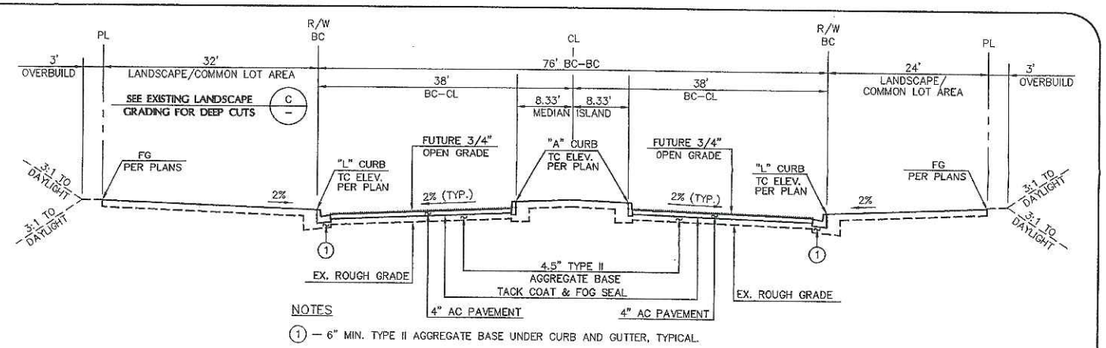
NOTES

(1) — 6" MIN. TYPE II AGGREGATE BASE UNDER CURB AND GUTTER, TYPICAL.

FROM STATION 308+87.23 TO END
SKY VISTA DRIVE TYPICAL SECTION
(PUBLIC NEIGHBORHOOD COLLECTOR LEVEL 1 WITH BIKE LANES)

NOT TO SCALE

B
–



NOTES

(1) — 6" MIN. TYPE II AGGREGATE BASE UNDER CURB AND GUTTER, TYPICAL.

FROM STATION 300+71.08 TO STATION 308+87.23
SKY VISTA DRIVE TYPICAL SECTION
(PUBLIC NEIGHBORHOOD COLLECTOR LEVEL 1 WITH BIKE LANES)

NOT TO SCALE

A
–

10 0 10 20
SCALE FEET

CLV DRAWING NO.

ISSUE DATE: 03/22/04 ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION

DESIGN:
DRAWN:
CHECK:
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 03-18-04
PLOT TIME: 07:53:12

DESCRIPTION | REV. DATE | DATE: | DATE: ACAD. APP | DATE: ROW APP

BRET A. HEINES
No. 9844
CIVIL
STATE OF NEVADA
PROFESSIONAL ENGINEER

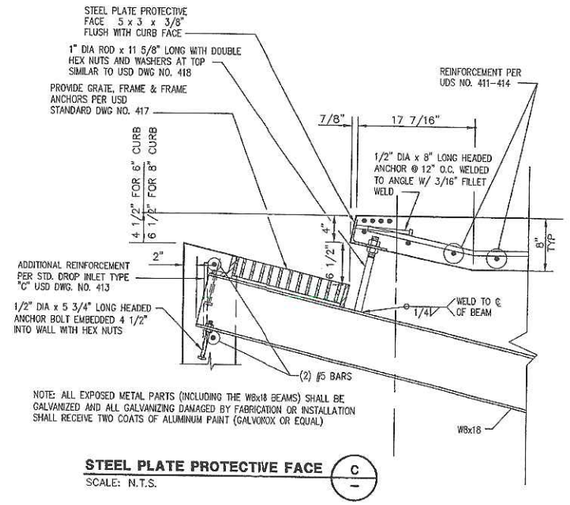
G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE (702) 804-8000 • FAX (702) 804-8080
F:\V24\SkyVista\dwg\maps\SVD-c012.dwg

SUMMERLIN
VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS
TYPICAL SECTIONS

JOB NO. 62A.24.220

SHEET
12
12 OF 19 SHTS

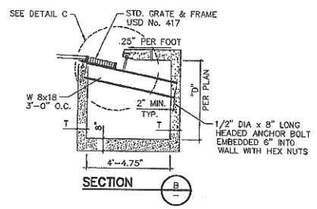
sm2435.dwg 020312.tb



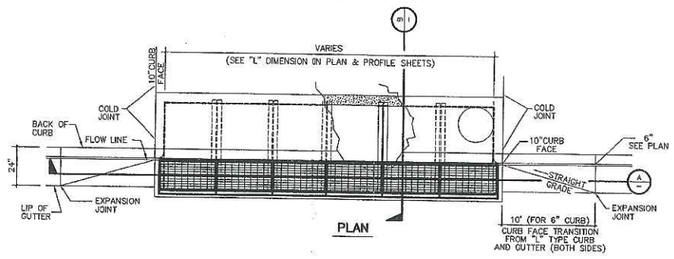
STEEL PLATE PROTECTIVE FACE (C)
SCALE: N.T.S.

"T" TABLE	
"D"	"T"
2'-0" TO 8'-0"	6"
8'-1" TO 20'-0"	8"

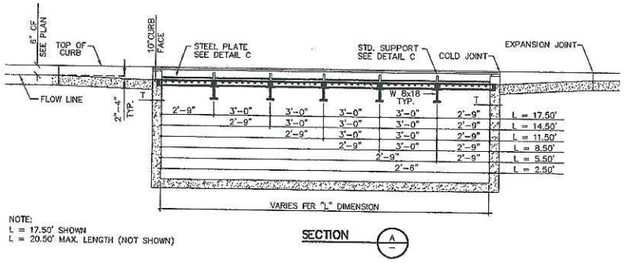
NOTES:
1. REINFORCEMENT PER STD. "DROP INLET TYPE "C", USD No. 413
2. ALL EXPOSED METAL PARTS SHALL BE GALVANIZED AND ALL GALVANIZING DAMAGED BY FABRICATION OR INSTALLATION SHALL RECIEVE TWO COATS OF ALUMINUM PAINT (GALVONOX OR EQUAL)



SECTION (B)



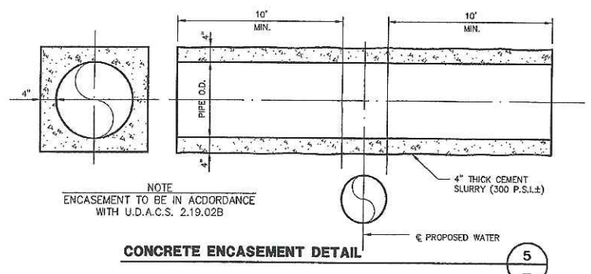
PLAN



NOTE:
L = 17.50' SHOWN
L = 20.50' MAX. LENGTH (NOT SHOWN)

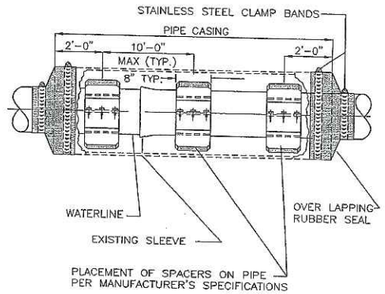
SECTION (A)

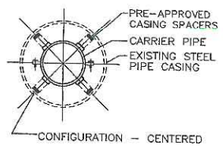
MODIFIED TYPE "C" DROP INLET (4)
NOT TO SCALE



NOTE
ENCASEMENT TO BE IN ACCORDANCE WITH U.D.A.C.S. 2.19.02B

CONCRETE ENCASEMENT DETAIL (5)
NOT TO SCALE





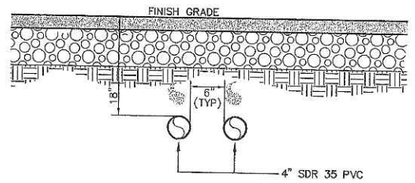
CROSS-SECTION

1. PRE-APPROVED CASING SPACERS AND PRE-APPROVED END SEALS INSTALLED PER MANUFACTURER'S SPECIFICATIONS. (REDWOOD SKIDS NOT ALLOWED. UDACS SECTION 3.26 NOT APPLICABLE). USE A "CENTERED CONFIGURATION AND PROVIDE THE MANUFACTURER WITH THE FOLLOWING.

   .PIPE OD
   .CASING ID
   .CASING LENGTH

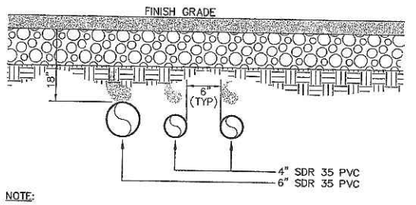
2. THE PIPE SHALL BE SUPPORTED AT EACH END JOINT WITH SPACERS, AFTER INSTALLATION OF THE PIPE, THE CASING SHALL BE SEALED AT BOTH ENDS WITH CASING END SEALS. DUCTILE IRON PIPE JOINTS INSIDE THE CASING ARE TO BE RESTRAINED.

PIPE INSTALLATION IN EXISTING SLEEVE DETAIL (3)
NOT TO SCALE



NOTE:
CONTRACTOR TO EXTEND SLEEVES 1' (12") BEHIND BACK OF CURB, TYP.

IRRIGATION SLEEVE
BANK "B"
NOT TO SCALE (2)



NOTE:
CONTRACTOR TO EXTEND SLEEVES 1' (12") BEHIND BACK OF CURB, TYP.

IRRIGATION SLEEVE
BANK "A"
NOT TO SCALE (1)

20 0 20 40
SCALE FEET

APPROVED FOR CONSTRUCTION
LAS VEGAS VALLEY WATER DISTRICT DATE

CLV DRAWING NO.

STATE OF NEVADA REGISTERED PROFESSIONAL ENGINEER BERNARD L. SCOTT 14040 4/10/04 DATE

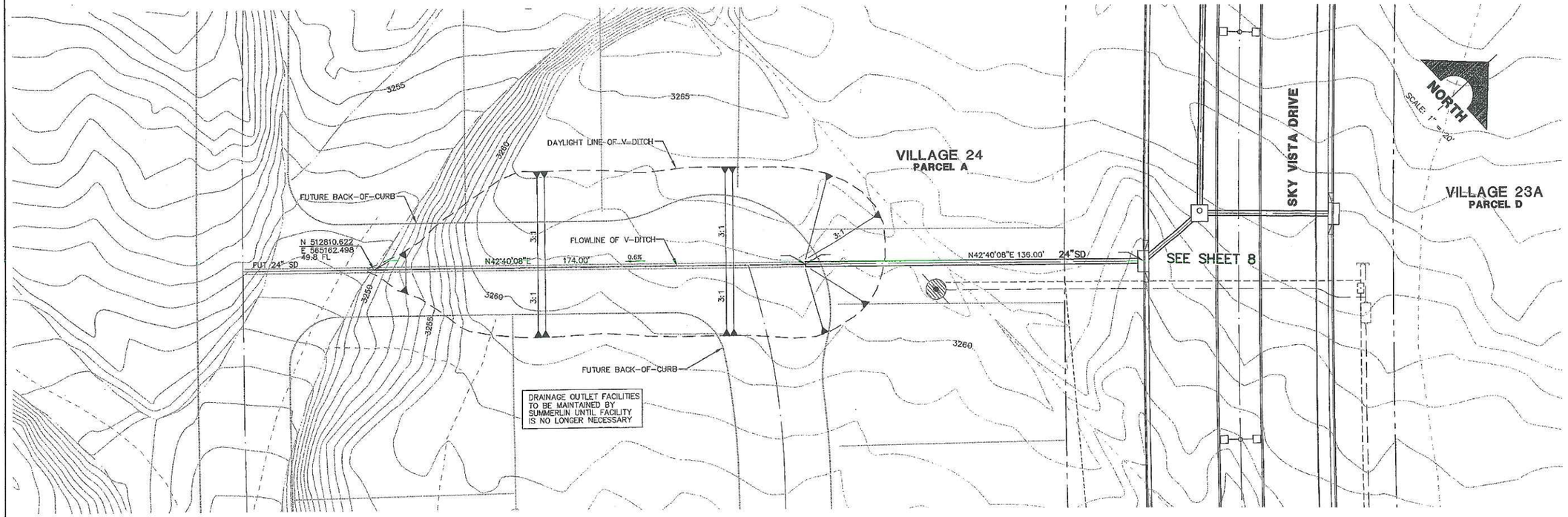
DESIGN:			
DRAWN:			
CHECK:			
ISSUE DATE:			
ISSUE EDITOR:			
PLOT DATE: 03-18-04			
PLOT TIME: 07:37:13			
REV.	DATE	DESCRIPTION	DATE
		ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION	03/22/04

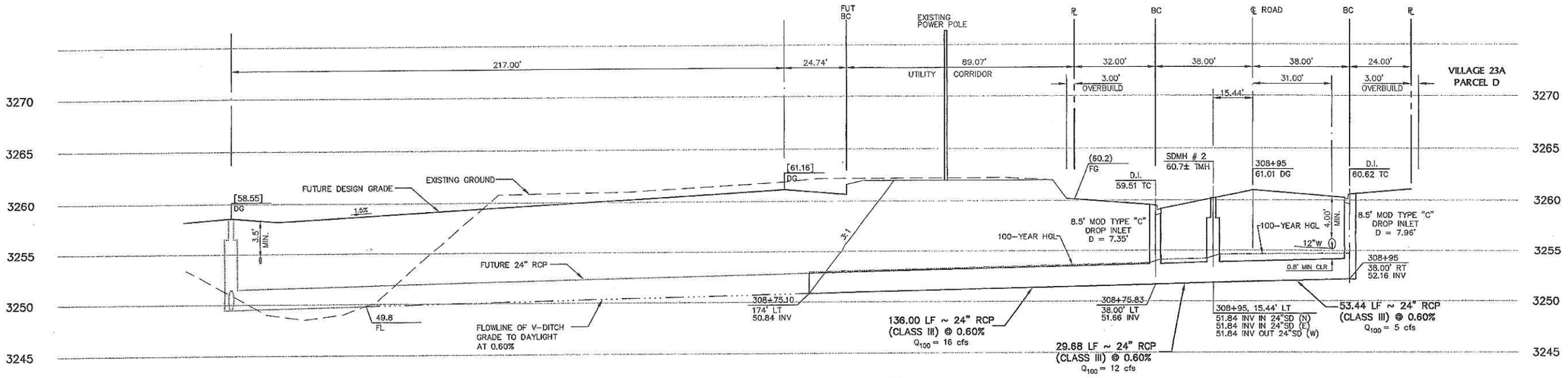
G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD. LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 FAX: (702) 804-2099 gwallace@gcwallace.com
F:\V24\Skyvista\dwg\lmpe\SVP-d013.dwg

ISSUE DATE: 03/22/04

SUMMERLIN
VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS
MISCELLANEOUS DETAILS
JOB NO. 62A.24.220

SHEET 13
13 OF 19 SHTS





STORM DRAIN LATERAL PLAN AND PROFILE
STATION 308+95.00 SKY VISTA DRIVE NOT TO SCALE

1
—

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE

CLV DRAWING NO.

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
F:\v24\SkyVista\dwg\mps\SVD-c014.dwg

DESIGN:
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ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 03-18-04
PLOT TIME: 11:22:10

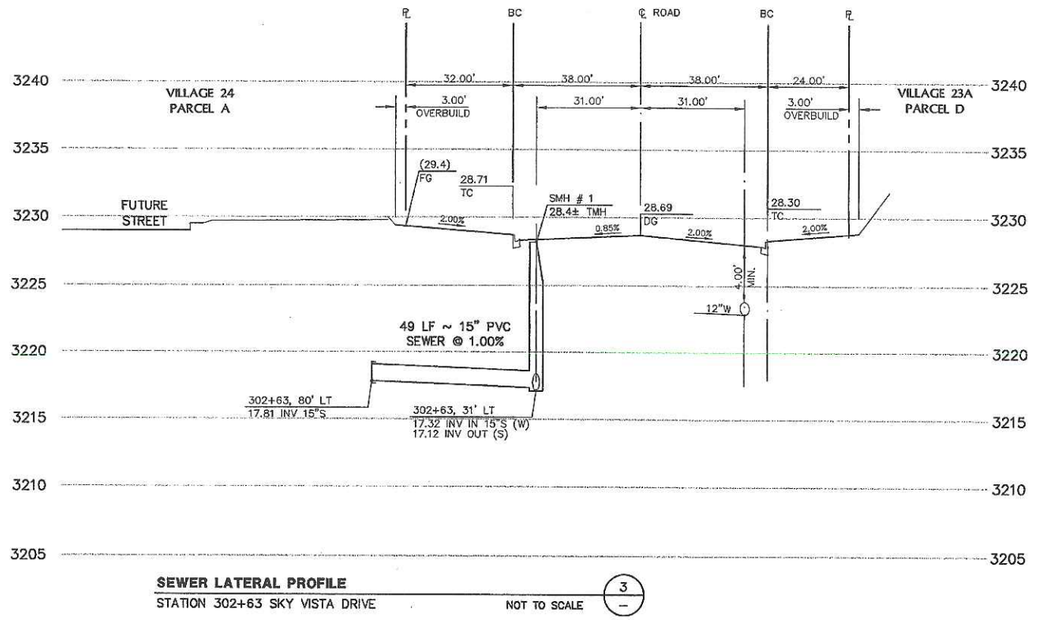
REV	DATE	DESCRIPTION	DATE	AGEN	APP	DATE	GCW	APP
A								

ISSUE DATE: 03/22/04 ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION

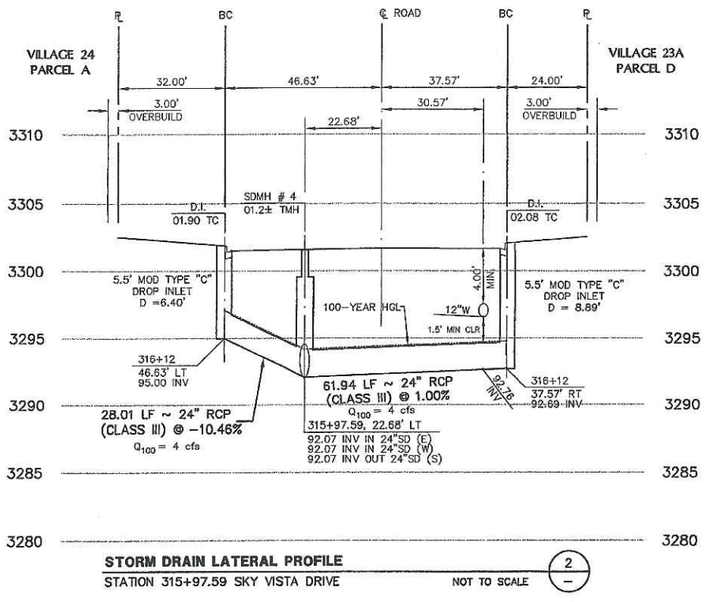
SUMMERLIN
VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS
LATERAL PROFILES

JOB NO. 62A.24.220

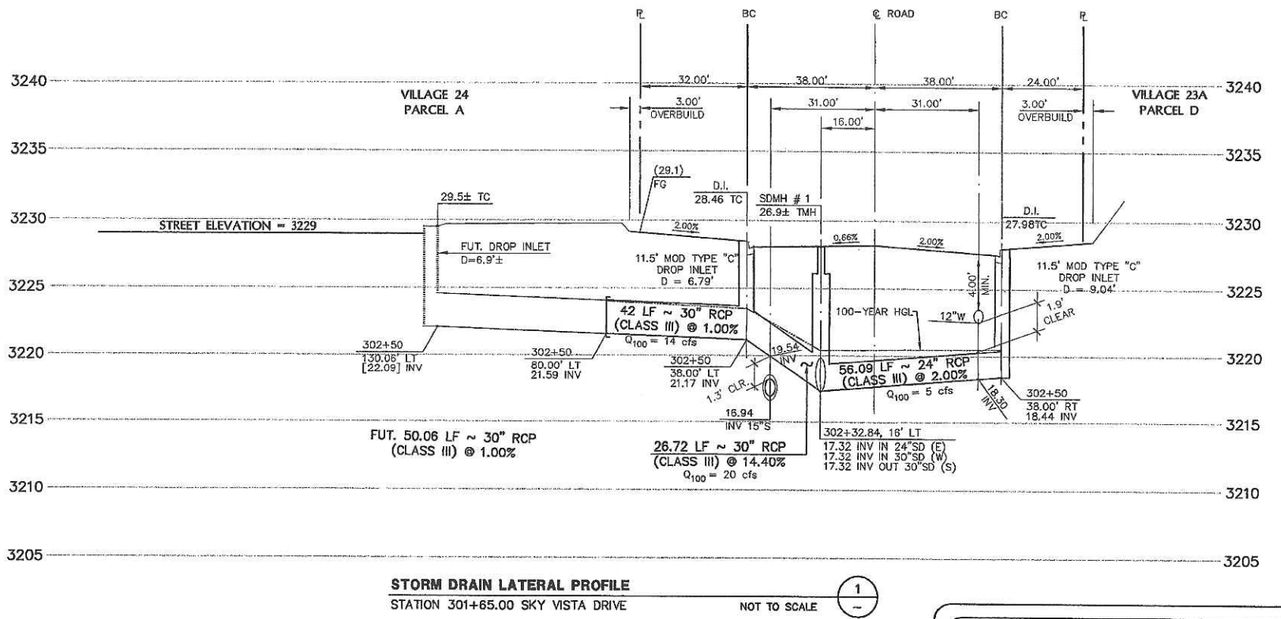
SHEET 14
14 OF 19 SHTS



SEWER LATERAL PROFILE
STATION 302+63 SKY VISTA DRIVE NOT TO SCALE (3 / —)



STORM DRAIN LATERAL PROFILE
STATION 315+97.59 SKY VISTA DRIVE NOT TO SCALE (2 / —)



STORM DRAIN LATERAL PROFILE
STATION 301+65.00 SKY VISTA DRIVE NOT TO SCALE (1 / —)

APPROVED FOR CONSTRUCTION

LAS VEGAS VALLEY WATER DISTRICT DATE

CLV DRAWING NO.

STATE OF NEVADA — BEN HUMPHREY — No. 10121 — PROFESSIONAL ENGINEER — DATE: 3/22/04

REV	DATE	DESCRIPTION	DATE	AGEN.	APP	DATE	ACW.	APP
A		ISSUE FOR AGENCY REVIEW - NOT FOR CONSTRUCTION						

DESIGN:
DRAWN:
CHECK:
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 03-18-04
PLOT TIME: 11:25:20

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
6670 S. Bermuda Rd. Las Vegas, NV 89119
TELEPHONE: (702) 804-8000 FAX: (702) 804-8299
gpeterson
F:\v24\SkyVista\dwg\Xmps\SVD-cd15.dwg

ISSUE DATE: 03/22/04

SUMMERLIN
VILLAGE 23A/24 SKY VISTA DRIVE IMPROVEMENTS
LATERAL PROFILES

JOB NO. 62A.24220

SHEET 15
15 OF 19 SHTS

FIA 229.0

RESPONSE TO COMMENTS ON THE TECHNICAL DRAINAGE STUDY FOR BROWNSTONE DIVERSION BERM

62A.24.007

May 2004

Prepared for:

Howard Hughes Corporation
10000 West Charleston Boulevard; Ste. 200
Las Vegas, Nevada 89135
Phone: (702) 791-4300
Fax: (702) 791-4450

G. C. WALLACE, INC.
Engineers/Planners/Surveyors

CITY OF LAS VEGAS
INTER-OFFICE MEMORANDUM

DATE: May 25, 2004

TO:
Land Development Services
Department of Public Works

FROM:
Albert Sung, P.E.
Flood Control Project Engineer
Department of Public Works

SUBJECT: Technical Drainage Study for:
Brownstone Diversion Berm in Summerlin

COPIES TO:
G. C. Wallace, Inc.
Howard Hughes Corp.
Bart Anderson, P.E., DevCo

Cross Streets:	NW of SMRLN V24 & Charleston Boulevard		
File Number:	F:\Depot\DSMEMOS\DS3655B.doc		
Parcel Number:	137-22-000-010		
Zoning Action:			
FEMA Flood Zone	YES	NO X	
Proposed Storm Drain	YES	NO X	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID G.R. No.
1st Submittal	4/12/2004	4/26/2004	Not Approved	$400.00	122924: $400
2nd Submittal	5/11/2004	5/25/2004	See Comments Below	$400.00	124847: $400
			TOTAL FEES (LDDRS):	**$800.00**	—

REMARKS:

The Drainage Study for the subject project has been reviewed and:

X	is approved subject to conformance to all City standards and the following conditions:
	must be resubmitted or supplemented including the following:
	is conditionally approved subject to Clark County Regional Flood Control District concurrence.

1. The project proposes to build an interim drainage facility at the boundary of Summerlin Village 31. Prior to final plan approval the developer must complete a maintenance and liability agreement for the interim drainage improvements (off-site berms) and post a minimum maintenance bond of $25,000 or 25-percent of the construction cost for the improvements, whichever is greater. In this case, the bond amount is $67,400.00. The engineer should contact the City's Land Development Section (229-6371) to begin the agreement process.

NOTE: Any future changes to the proposed design (or design assumptions) as outlined in the approved drainage study and attached preliminary grading plan which affect drainage must be addressed in a Drainage Study Amendment and accepted by the City of Las Vegas Flood Control Section. Additionally, conditional acceptance of a drainage study is valid for a period of one (1) year. If the proposed construction has not been completed in that time period, the City of Las Vegas reserves the right to require additional conditions and/or submission and acceptance of a complete drainage study update prior to further construction of a project.

Note: All land surface area disturbances over 1 acre require a stormwater discharge permit issued by the Nevada Division of Environmental Protection (NDEP). A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. A stormwater discharge permit application and associated information may be downloaded from the web site:

http://www.state.nv.us/ndep/bwpc/storm01.htm

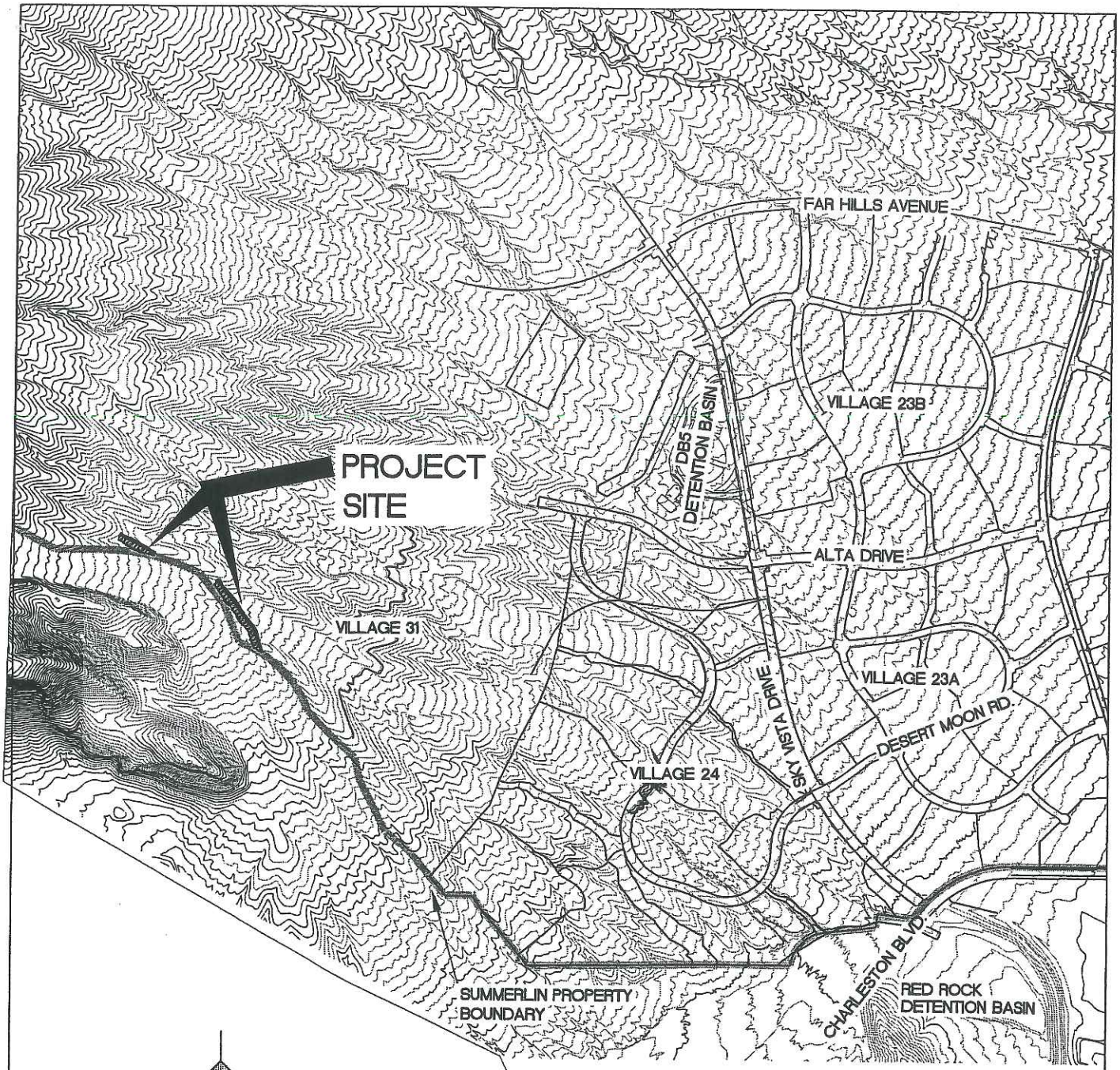
Projects that disturb more than one acre of land must submit to NDEP a "Notice of Intent" for inclusion under Stormwater Permit No. NVR100000 along with the appropriate filling fee.

END OF REMARKS

T/R/S: T20S/R59E/22
REA K-22

B&H/ays

Post-it® Fax Note 7671 | Date 5/25/04 | # of pages ▶
To Randy Gremlich | From Albert Sung



NORTH

GRAPHIC SCALE

2000 0 1000 2000

(IN FEET)

1 inch = 2000 ft.

SUMMERLIN
BROWNSTONE BERMS

EXHIBIT

PROPOSED LOCATION MAP

G.C. WALLACE, INC.
Engineers/Planners/Surveyors

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RESPONSE TO COMMENTS
ON THE
CONCEPTUAL DRAINAGE STUDY
FOR
SUMMERLIN VILLAGE 24

62A.24.001

March 2004

Prepared for:

The Howard Hughes Corporation
a Delaware Corporation
10000 West Charleston Blvd., Ste. 200
Las Vegas, Nevada 89134
Phone: (702) 791-4300
Fax: (702) 791-4453

G. C. WALLACE, INC.
Engineers/Planners/Surveyors

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM			DATE: June 1, 2004
TO: Land Development Services Department of Public Works			FROM: Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for: Summerlin Village 24 - Conceptual		COPIES TO: G.C. Wallace
Cross Streets:	NWC of Charleston Boulevard at Red Rock Detention Basin		Howard Hughes Corp.
File Number:	F:\Depot\DSMEMOS\DS3505C.doc		Bart Anderson, P.E., DevCo
Parcel Number:	137-22-000-010		CCRFCD
Zoning Action:			CCPW
FEMA Flood Zone:	YES	NO X	
Proposed Storm Drain	YES X	NO	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID G.R. No.
1st Submittal	2/13/2004	2/27/2004	Not Approved	$400.00	119424: $400
2nd Submittal	3/19/2004	4/2/2004	Conditional Approval	$400.00	121560: $400
CCRFCD	5/18/2004	6/1/2004	See Comments Below	N/C	N/C
			TOTAL FEES (LDDRS):	$800.00	---

REMARKS:

The Drainage Study for the subject project has been reviewed and:

	is approved subject to conformance to all City standards and the following conditions:
	must be resubmitted or supplemented including the following:
	is conditionally approved subject to Clark County Regional Flood Control District concurrence.
X	must have Clark County Department of Development Services concurrence

1. *The site is adjacent to the Clark County jurisdiction boundary. The engineer must coordinate with Clark County Public Works and incorporate any concerns for boundary conditions along the south border. CCPW concurrence is required prior to final acceptance of the study.*

2. The final approval of this conceptual study is based off two offsite flows from the *Summerlin West Master Plan Study* (1900 cfs at concentration point 23 and 615 cfs at concentration point 9). The two points of impact are at the west boundary of Village 24. Any future land use change which leads to a higher density and higher curve numbers will constitute a revision of the *Summerlin West Master Plan*. The subject Village 24 and all drainage infrastructures must be updated per the revised 100-year offsite flows.

3. Per previous comment #4 and response, a technical drainage study will be submitted to address the impact of discharge from the proposed storm drain to natural washes adjacent to the Charleston Bridge.

4. *The "Future Berm" proposed in Figure 5 must be designed in a technical study and constructed prior to any development of Village 24.*

5. *Hydraulic calculations for the proposed storm drain system must be submitted in a technical drainage study for Village 24 upon site development.*

Note: All land surface area disturbances over 1 acre require a stormwater discharge permit issued by the Nevada Division of Environmental Protection (NDEP). A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. A stormwater discharge permit application and associated information may be downloaded from the web site:

http://www.state.nv.us/ndep/bwpc/storm01.htm

Projects that disturb more than one acre of land must submit to NDEP a "Notice of Intent" for inclusion under Stormwater Permit No. NVR100000 along with the appropriate filling fee.

END OF REMARKS
B&H/ays

T/R/S: T20S/R59E/22
AREA K-22

Post-it® Fax Note 7671	Date 6/1/04	# of pages ▶ 2
To Randy Gremlich	From Albert Sunly	
Co./Dept. GCW	Co. CLV	
Phone #	Phone # 229-2001	
Fax # 804-2299	Fax #	

Department of Development Services
Civil Engineering Division

600 S Grand Central Pky 1st Fl • PO Box 551799 • Las Vegas NV 89155-1799
(702) 455-4600 • Fax (702) 388-2550

Phil Rosenquist, Director • Carla J. Pearson, Assistant Director

May 4, 2004

G.C. Wallace, Inc.
1555 South Rainbow Blvd.
Las Vegas, Nevada 89146

Re: Clark County Concurrence:
Conceptual Drainage Study for Summerlin Village 24
Study Dated: February 2004
Addendum #1 Dated: March 19, 2004
Location: Northwest corner of Charleston Blvd. at Red Rock Detention Basin
SEC. 22, T. 20 S., R. 59 E.
CLV # DS3505B
HTE # 04-21692

The above-referenced project is located in the City of Las Vegas adjacent to Clark County unincorporated areas. The drainage study was submitted to the County for concurrence. The County has reviewed the conceptual drainage study, and addenda. In addition, the County has received the acceptance letter dated April 8, 2004 for the conceptual drainage study from the City of Las Vegas.

The County concurs with the acceptance of this conceptual drainage study by the City of Las Vegas. Please note that the County's review of this development is limited to drainage issues significant to Clark County unincorporated areas.

No liability is assumed by the County for information, data, and conclusions of the consulting engineer.

DEPARTMENT OF DEVELOPMENT SERVICES

By _____
Gabriel Herrera, P.E.
Senior Civil Engineer
Major Projects Division

cc: The Howard Hughes Corporation
Albert Sung, P.E., City of Las Vegas

P:\CURRENT PLANNING\MAJOR PROJECTS\drainage\summerlin\CLV-Concurrance\04-21692APP.doc

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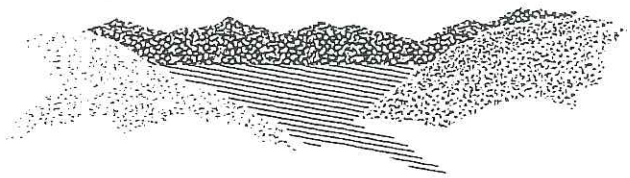
REGIONAL FLOOD CONTROL DISTRICT



Gale Wm. Fraser, II, P.E.
General Manager/Chief Engineer

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Bruce L. Woodbury
Clark County

May 14, 2004

Mr. Randy Fultz, P.E.
City of Las Vegas Public Works
731 S. Fourth St
Las Vegas, NV 89101

DISTRICT CONCURRENCE: SUMMERLIN VILLAGE 24 (DS3505)
(RFCD NO. 04-5683)

Dear Mr. Fultz:

Clark County Regional Flood Control District (District) reviewed Technical Drainage Study dated March 19, 2004, for the above-mentioned project as submitted by G. C. Wallace, Inc. In addition, District is in receipt of the Conditional Letter of Acceptance from City of Las Vegas Public Works dated April 8, 2004.

District concurs with acceptance of this Technical Drainage Study by City of Las Vegas Public Works.

District's review of this project was limited to issues of Regional Flood Control Significance as defined in *Uniform Regulations for the Control of Drainage.*

Please be aware that as additional information becomes available and/or restudies of Flood Insurance Studies are performed, information submitted by G. C. Wallace, Inc. may be superseded. Compliance with regulatory elements and design standards specified in *Uniform Regulations for the Control of Drainage* does not imply a guarantee that properties will be free from flooding or flood damage. The District, its officials, or employees assume no liability for information, data, or conclusions presented by consulting engineers. We, therefore, make no warranties, either expressed or implied, in conducting this review.

GALE WM. FRASER, II, P.E.
General Manager/Chief Engineer

BY: _____
Andrew R. Trelease, P.E.
Senior Civil Engineer

ART:css

c: Randall K. Gremlich, P.E., G. C. Wallace, Inc.

File: 20-59-22.GCW

600 S. Grand Central Parkway, Suite 300 • Las Vegas, Nevada 89106-4511
(702) 455-3139 • FAX: (702) 455-3870
Website: *http://www.ccrfcd.org*



SUMMARY OF HEC-1 MODEL

BASIN/ CONCENTRATION POINT	AREA (ac)	Q100 (cfs)
RG6*	220.2	477
OFF5	187.8	615
ON7	45.3	111
CP6	–	688
CP7	–	1096
OFF6	3.5	13
ON8	89.0	207
CP8	–	1245
OFF7	76.1	203
OFF8	13.8	40
CP9	–	242
ON9	35.8	91
CP10	–	309
OFF9	4.4	15
OFF10	7.4	24
CP11	–	39
ON10	47.9	125
CP12	–	152
OFF11	30.6	85
OFF12	2.01	7
OFF13	1.21	4
OFF14	5.1	16
CP13	–	107
ON12	65.5	178
CP14	–	265
OFF15	44.3	123
ON17	14.0	39
CP15	–	163
OFF16	7.1	23
OFF17	1.1	4
CP16	–	27
ON18	7.9	26
CP17	–	53
CP18	–	201
ON16	2.4	9
CP19	–	206
ON14	22.8	64
CP20	–	270
ON15	2.7	9
CP21	–	277
ON13	13.2	37
CP22	–	313
CP23	–	564
ON11	18.6	52
CP24	–	615
CP25	–	762
CP26	–	1021
CP27	–	2152
ON20	1.2	4
CP28	–	2153
ON19	7.3	26
CP29	–	2163

*Referenced from Village 23A Rough Grade Study

**Future berm sites to be addressed in separate technical drainage study not included in this study.

REV	DATE	DESCRIPTION	DATE	AGEN. APP	DATE	GCW. APP	DATE

DESIGN:
DRAWN:
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ISSUE EDITOR:
PLOT DATE: 04-08-04
PLOT TIME: 11:59:17

G.C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 88146
TELEPHONE: (702) 804-2000* FAX: (702) 804-2299
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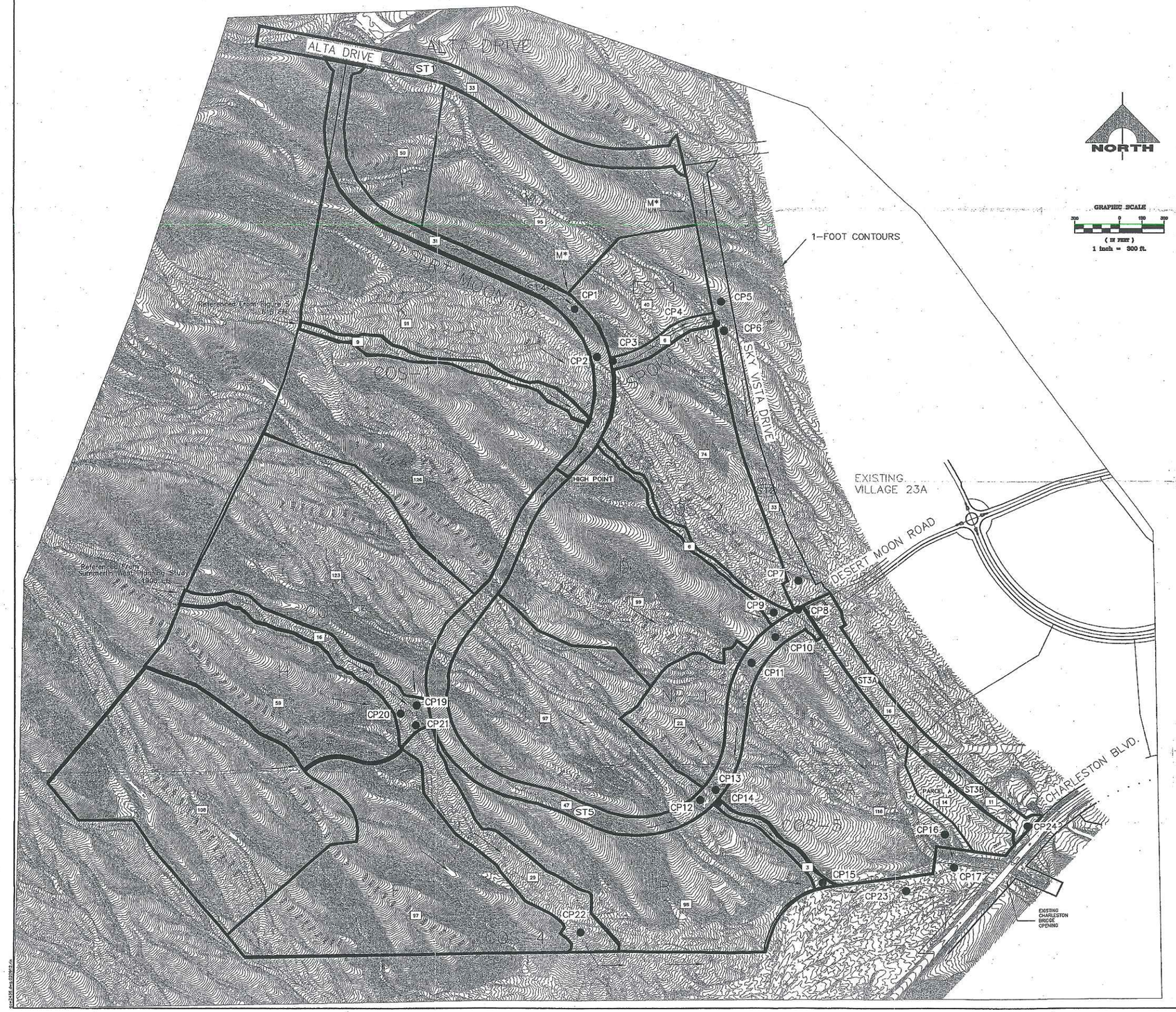
THE HOWARD HUGHES CORPORATION
SUMMERLIN VILLAGE 24
FIGURE 5
EXISTING CONDITIONS DRAINAGE MAP

SHEET
FIG 5
OF SHTS



NORTH

GRAPHIC SCALE

200 0 100 200

(IN FEET)

1 inch = 200 ft.

SUMMARY OF HEC-1 MODEL

BASIN / CONCENTRATION POINT	AREA (ac)	Q100 (cfs)	Q10 (cfs)
L	15.0	50	24
M*	20.2	63	31
CP1	–	109	54
K	29.7	91	44
CP2	–	198	99
ST4	10.2	31	16
CP3	–	226	113
ST6	1.5	6	3
CP4	–	231	115
M*	20.2	63	31
ES-1	12.1	40	19
CP5	–	101	50
CP6	–	330	165
C	25.8	74	34
CP7	–	402	199
ST2	10.0	33	17
CP8	–	435	216
COS-1	3.1	9	4
COS-2	2.2	6	3
CP9	–	16	7
CP10	–	448	222
D	33.5	99	47
CP11	–	545	269
E	32.2	97	46
NP-1	9.6	22	8
CP12	–	119	55
CP13	–	656	324
ST5	15.9	47	24
CP14	–	702	348
B	31.1	96	46
COS-5	0.5	3	1
CP15	–	785	385
A	39.9	118	54
ST3A	3.9	16	8
CP16	–	126	59
CP17	–	901	444
J	28.4	126	60
I	40.5	123	59
CP19	–	245	119
G	42.7	108	45
H	22.1	59	25
CP20	–	163	69
COS-3	5.2	16	7
CP21	–	421	194
F	38.0	97	41
CP22	–	472	229
COS-4	9.3	29	12
CP23	–	1388	665
ST1	9.2	33	17
ST3B	2.6	11	6
PARCEL A	4.3	14	7
CP24	–	25	12
M	30.3	95	47

In order to be conservative, M* represents 2/3 of (63 cfs) the flow generated from basin M. However, the total discharge for Parcel M cannot exceed 95 cfs.

LEGEND

- SUBBASIN BOUNDARY
- (ST1) SUBBASIN DESIGNATION
- CP1 COMBINATION POINT
- FLOW DIRECTION
- [23] MAXIMUM PARCEL DISCHARGE

DESIGN:
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PLOT DATE: 03-24-04
PLOT TIME: 11:18:17

NO.	DESCRIPTION	DATE	APP'D	DATE	SCH.	APP'D	DATE
		REV. DATE		DESIGN		APP'D	DATE

G. C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BLVD./LAS VEGAS, NEVADA 89146
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299

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THE HOWARD HUGHES CORPORATION
SUMMERLIN VILLAGE 24
FIGURE 6
ULTIMATE CONDITIONS DRAINAGE MAP

SHEET
FIG 6
OF SHTS

ALTA DRIVE

FUTURE
VILLAGE 31

EXISTING
VILLAGE 23A

SKY VISTA DRIVE

DESERT MOON ROAD

CHARLESTON BLVD.

NORTH

GRAPHIC SCALE
300 0 150 300
(IN FEET)
1 inch = 300 ft.

160 CFS @2%
36" @1% 50 CFS
210 CFS 66" @2%
42" @1% 63 CFS
269 CFS 66" @2%
63 CFS
42" @1% 74 CFS
595 CFS 84" @2%
622 CFS 8X8 RCB OPENING
48" @1% 99 CFS
1223 CFS 8X8 RCB
1320 CFS 8X8 RCB
1559 CFS 8X9 RCB
1679 CFS
36" @1% 40 CFS
391 CFS 72" @2%
48" @2% 101 CFS
390 CFS 78" @2%
615 CFS
48" @1% 91 CFS
615 CFS
126 CFS
126 CFS 48" @1%
1900 CFS
48" @1% 123 CFS
36" @1% 59 CFS
48" @1% 108 CFS
48" @1% 108 CFS
36" @1% 22 CFS
48" @1% 97 CFS
48" @1% 97 CFS
48" @1% 96 CFS
48" @1.2% 99 CFS
24" @1% 16 CFS
54" @1% 126 CFS
30" SD @ 1%
EXISTING 30" SD

PUBLIC DRAINAGE EASEMENT TO BE PRIVATELY MAINTAINED

PARCEL A

SUMMERLIN PROPERTY LINE

CP

LEGEND

- PROPOSED STORM DRAIN LAYOUT
- ST1 SUBBASIN DESIGNATION
- 22 DESIGN POINT
- FLOW DIRECTION
- 27 MAXIMUM ALLOWABLE DISCHARGE FROM PARCEL

DESIGN:
DRAWN:
CHECK:
ISSUE DATE:
ISSUE EDITOR:
PLOT DATE: 03-19-04
PLOT TIME: 07:55:16

REV.	DATE	DESCRIPTION	DATE	AGEN.	APP.	DATE	DGW	APP.

DATE:

G. C. WALLACE, INC.
Engineers/Planners/Surveyors
1555 SOUTH RAINBOW BOULEVARD, SUITE 400
TELEPHONE: (702) 804-2000 • FAX: (702) 804-2299
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THE HOWARD HUGHES CORPORATION
SUMMERLIN VILLAGE 24
FIGURE 8
PROPOSED FACILITIES DRAINAGE MAP

SHEET
FIG 8
OF SHTS

RUNOFF CURVE NUMBERS
(SEMIARID RANGELANDS[1])

Cover description		Curve numbers for hydrologic soil group—			
Cover type	Hydrologic condition[2]	A[3]	B	C	D
Herbaceous—mixture of grass, weeds, and low-growing brush, with brush the minor element.	Poor		80	87	93
	Fair		71	81	89
	Good		62	74	85
Oak-aspen—mountain brush mixture of oak brush, aspen, mountain mahogany, bitter brush, maple, and other brush.	Poor		66	74	79
	Fair		48	57	63
	Good		30	41	48
Pinyon-juniper—pinyon, juniper, or both; grass understory.	Poor		75	85	89
	Fair		58	73	80
	Good		41	61	71
Sagebrush with grass understory.	Poor		67	80	85
	Fair		51	63	70
	Good		35	47	55
Desert shrub—major plants include saltbush, greasewood, creosotebush, blackbrush, burrage, palo verde, mesquite, and cactus.	Poor	63	77	85	88
	Fair	55	72	81	86
	Good	49	68	79	84

[1]Average runoff condition, and $I_a = 0.2S$.

[2]*Poor:* <30% ground cover (litter, grass, and brush overstory).
Fair: 30 to 70% ground cover.
Good: >70% ground cover.

[3]Curve numbers for group A have been developed only for desert shrub.

used for existing conditions onsite & offsite

Revision	Date

RESIDENTIAL (Density = 10.0 units per acre)

Composite Curve Number Calculations
Lot Size = > 6000 sq. ft.

Hydrologic Soil Group	Residential	Commercial
A	81.0	81.0
B	88.0	88.0
D	93.0	93.0

G.C. Wallace, h
Date: 11/24/03
File: 24-cn.wb3
By: ALG

SOIL 502

Description	Type	%	Residential	Residential
Arizo	A	5.00%	4.1	4.1
Canutio	B	55.00%	48.4	48.4
Cave	D	40.00%	37.2	37.2
Composite CN		100.00%	89.7	89.7

SOIL 155

Description	Type	%	Residential	Residential
Arizo	A	5.00%	4.1	4.1
Caliza	B	5.00%	4.4	4.4
Cave	D	90.00%	83.7	83.7
Composite CN		100.00%	92.2	92.2

PROPOSED CONDITIONS

SUBBASIN	Residential		COMP CN
SUBBASIN	Soil 502	Soil 155	
M	0.00%	100.00%	92

RESIDENTIAL (Density = 6.3 units per acre)

Composite Curve Number Calculations
Lot Size = 7,000 Sq. Ft. Lots

Hydrologic Soil Group	Interior Streets	Residential
A	98.0	76.0
B	98.0	84.0
D	98.0	91.0

G.C. Wallace, Inc.
Date: 11/24/03
File: 24-cn.wb3
By: ALG

SOIL 502

Description	Type	%	Interior Streets	Residential
Arizo	A	5.00%	4.9	3.8
Canutio	B	55.00%	53.9	46.2
Cave	D	40.00%	39.2	36.4
Composite CN		100.00%	98.0	86.4

SOIL 155

Description	Type	%	Interior Streets	Residential
Arizo	A	5.00%	4.9	3.8
Caliza	B	5.00%	4.9	4.2
Cave	D	90.00%	88.2	81.9
Composite CN		100.00%	98.0	89.9

PROPOSED CONDITIONS

SUBBASIN	Residential			COMP CN
SUBBASIN	Street	Soil 502	Soil 155	
A	10.00%	20.00%	70.00%	90
B	10.00%	0.00%	90.00%	91
C	10.00%	10.00%	80.00%	90
D	10.00%	0.00%	90.00%	91
E	10.00%	0.00%	90.00%	91
I	10.00%	0.00%	90.00%	91
J	10.00%	0.00%	90.00%	91
K	10.00%	0.00%	90.00%	91

RESIDENTIAL (Density = 4.3 units per acre)

Composite Curve Number Calculations
Lot Size = 10,000 Sq. Ft. Lots

Hydrologic Soil Group	Interior Streets	Residential
A	98.0	61.0
B	98.0	75.0
D	98.0	87.0

G.C. Wallace, Inc.
Date: 11/24/03
File: 24-cn.wb3
By: ALG

SOIL 502

Description	Type	%	Interior Streets	Residential
Arizo	A	5.00%	4.9	3.1
Canutio	B	55.00%	53.9	41.3
Cave	D	40.00%	39.2	34.8
Composite CN		100.00%	98.0	79.1

SOIL 155

Description	Type	%	Interior Streets	Residential
Arizo	A	5.00%	4.9	3.1
Caliza	B	5.00%	4.9	3.8
Cave	D	90.00%	88.2	78.3
Composite CN		100.00%	98.0	85.1

PROPOSED CONDITIONS

SUBBASIN	Residential			COMP CN
SUBBASIN	Street	Soil 502	Soil 155	
F	10.00%	0.00%	90.00%	86
G	10.00%	0.00%	90.00%	86
H	10.00%	0.00%	90.00%	86

PARK/OPEN SPACE

Composite Curve Number Calculations

Hydrologic Soil Group	Park (Fair Condition)	Open Space (Natural Desert Landscaping)
A	49.0	63.0
B	69.0	77.0
D	84.0	88.0

G.C. Wallace, Inc.

Date: 11/24/03

File: 24-cn.wb3

By: ALG

SOIL 502

Description	Type	%	Park	Open Space
Arizo	A	5.00%	2.5	3.2
Canutio	B	55.00%	38.0	42.4
Cave	D	40.00%	33.6	35.2
Composite CN		100.00%	74.0	80.7

SOIL 155

Description	Type	%	Park	Open Space
Arizo	A	5.00%	2.5	3.2
Caliza	B	5.00%	3.5	3.9
Cave	D	90.00%	75.6	79.2
Composite CN		100.00%	81.5	86.2

PROPOSED CONDITIONS

SUBBASIN	Park/Open Space		COMP CN
SUBBASIN	Soil 502	Soil 155	
COS-1	0.00%	100.00%	86
COS-2	0.00%	100.00%	86
COS-3	0.00%	100.00%	86
COS-4	0.00%	100.00%	86
COS-5	0.00%	100.00%	86
NP-1	0.00%	100.00%	82

Apartments
Composite Curve Number Calculations

Hydrologic Soil Group	APARTMENTS	CONDO
A	81.0	81.0
B	88.0	88.0
D	93.0	93.0

G.C. Wallace, Inc.
Date: 1/24/04
File: 24-cn.wb3
By: ALG

SOIL 502

Description	Type	%	Apartments	Condos
Arizo	A	5.00%	4.1	4.1
Canutio	B	55.00%	48.4	48.4
Cave	D	40.00%	37.2	37.2
Composite CN		100.00%	89.7	89.7

SOIL 155

Description	Type	%	Apartments	Condos
Arizo	A	5.00%	4.1	4.1
Caliza	B	5.00%	4.4	4.4
Cave	D	90.00%	83.7	83.7
Composite CN		100.00%	92.2	92.2

PROPOSED CONDITIONS

SUBBASIN	Apartments		COMP CN
SUBBASIN	Soil 502	Soil 155	
L	0.00%	100.00%	92
ES-1	0.00%	100.00%	92

SUMMERLIN VILLAGE 24
CONCEPTUAL DRAINAGE STUDY
STREET CURVE NUMBER CALCULATIONS

Composite Curve Number

Subbasin	Total Area (ac)	Pave Area (ac)	CN Pave	Open Area (ac)	CN Open	CN
ST1	9.18	5.5	98	3.7	88	94
ST2	9.45	5.7	98	3.8	88	94
ST3	6.7	4.0	98	2.7	88	94
ST4	11.86	7.1	98	4.7	88	94
ST5	14.22	8.5	98	5.7	88	94
ST6	1.5	0.9	98	0.6	88	94

ST1	ALTA DRIVE
ST2	SKY VISTA DRIVE
ST3	SKY VISTA DRIVE
ST4	DESERT MOON ROAD
ST5	DESERT MOON ROAD
ST6	SPOKE "A"

File: 2-ULT-SF4.wb2 02/05/04

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

TIME OF CONCENTRATION

G.C. Wallace, Inc.
File: ULT-SF4.WB2
Project No.: 62024-001

SUMMERLIN VILLAGE 24
ULTIMATE CONDITIONS

BY: ALG
DATE: 02/05/04

SUB-BASIN DATA						INITIAL / OVERLAND TIME (TI)			TRAVEL TIME (Tt)					Tc CHECK URBANIZED BASINS		Tc	Tlag	REMARKS
DESIG: (1)	DEV./EX. (D or E)	CN	K (2)	AREA Ac (3)	AREA MI^2	INITIAL LENGTH Feet (4)	SLOPE % (5)	TI Min (6)	TRAVEL LENGTH Feet (7)	SLOPE % (8)	V1 VELOCITY FPS (9a)	V2 VELOCITY FPS (9b)	Tt Min (10)	TOTAL LENGTH Ft (11)	Tc = (L/180)+10 Min (12)	Min (13)	Tlag= 0.6Tc/60 Hours	
L	D	92.0	0.8244	15.0	0.02344	100	1.0	5.0	1275	2.6	8.3	5.0	5.1	1375	17.6	10.1	0.101	
M*	D	92.0	0.8244	20.2	0.03156	100	1.0	5.0	1940	1.9	2.7	4.2	8.8	2040	21.3	13.8	0.138	
C	D	90.0	0.7980	25.8	0.04031	200	1.0	7.7	2580	3.2	3.6	5.5	8.7	2780	25.4	16.3	0.163	
D	D	91.0	0.8112	33.5	0.05230	200	1.0	7.4	2595	3.3	3.7	5.6	8.6	2795	25.5	15.9	0.159	
E	D	91.0	0.8112	32.2	0.05036	200	1.0	7.4	2215	3.0	3.5	5.3	7.8	2415	23.4	15.1	0.151	
ES-1	D	92.0	0.8244	12.1	0.01883	100	1.0	5.0	1125	2.0	2.9	4.3	5.3	1225	16.8	10.3	0.103	
NP-1	D	82.0	0.6924	9.6	0.01494	200	1.0	10.4	940	5.8	4.9	7.4	2.7	1140	16.3	13.1	0.131	
A	D	90.0	0.7980	39.9	0.06234	200	1.0	7.7	2404	4.0	4.0	6.1	7.3	2604	24.5	15.0	0.150	
B	D	91.0	0.8112	31.1	0.04859	200	2.0	5.8	2603	6.3	5.1	7.7	6.2	2803	25.6	12.0	0.120	
F	D	86.0	0.7452	38.0	0.05938	300	2.0	8.8	2218	6.3	5.1	7.7	5.4	2618	24.0	14.1	0.141	
G	D	86.0	0.7452	42.7	0.06672	300	2.0	8.8	2491	4.4	4.2	6.4	7.1	2791	25.5	15.9	0.159	
H	D	86.0	0.7452	22.1	0.03453	300	5.0	6.8	1759	7.1	5.4	8.2	4.1	2069	21.4	10.6	0.106	
I	D	91.0	0.8112	40.5	0.06328	200	1.0	7.4	2458	4.5	4.3	6.5	7.0	2658	24.8	14.3	0.143	
J	D	91.0	0.8112	43.0	0.06719	200	1.0	7.4	2935	3.6	3.8	5.8	9.2	3135	27.4	16.5	0.165	
K	D	91.0	0.8112	29.7	0.04641	200	1.0	7.4	1771	4.8	4.4	6.7	5.0	1971	21.0	12.4	0.124	
COS-1	D	86.0	0.7452	3.1	0.00484	50	2.0	3.6	1925	6.2	5.0	7.6	4.8	1975	21.0	8.3	0.083	
COS-2	D	86.0	0.7452	2.2	0.00344	50	2.0	3.6	1730	4.9	4.5	6.8	4.9	1780	19.9	8.5	0.085	
COS-3	D	86.0	0.7452	5.2	0.00813	50	2.0	3.6	1516	5.3	4.6	7.0	4.2	1566	18.7	7.8	0.078	
COS-4	D	86.0	0.7452	9.3	0.01456	50	2.0	3.6	1880	5.4	4.7	7.1	5.0	1930	20.7	8.6	0.086	
COS-5	D	86.0	0.7452	0.9	0.00141	50	1.0	4.5	1878	6.7	5.2	7.9	4.5	1928	20.7	9.0	0.090	
ST-1	D	94.0	0.8508	9.2	0.01434	30	2.0	2.0	3000	5.8	4.9	7.4	7.4	3030	26.8	9.3	0.093	
ST-2	D	94.0	0.8508	10.0	0.01563	30	2.0	2.0	3500	2.9	3.4	5.2	12.0	3530	29.6	14.0	0.140	
ST-3A	D	94.0	0.8508	3.9	0.00609	30	2.0	2.0	1158	5.8	4.8	7.3	3.2	1188	16.6	5.2	0.052	
ST-3B	D	94.0	0.8508	2.6	0.00406	30	2.0	2.0	871	5.8	4.8	7.3	2.6	901	15.0	4.5	0.045	Use 5.0 Min
ST-4	D	94.0	0.8508	10.2	0.01594	30	2.0	2.0	4470	2.5	3.2	4.8	16.4	4500	35.0	18.4	0.184	
ST-5	D	94.0	0.8508	15.9	0.02483	30	1.0	2.5	5440	2.2	3.0	4.6	20.7	5470	40.4	23.2	0.232	
ST-6	D	94.0	0.8508	1.5	0.00234	30	1.0	2.5	1125	2.2	3.0	4.6	5.0	1155	16.4	7.5	0.075	
OFF1	D	95.0	0.8640	29.3	0.04578	100	2.0	3.4	2665	3.8	4.0	6.0	8.1	2765	25.4	11.5	0.115	
NDOT	D	98.0	0.9036	2.8	0.00438	30	2.0	1.5	1000	3.0	3.5	5.3	4.0	1030	15.7	5.5	0.055	
Parcel A	D	90.0	0.7980	4.3	0.00672	100	1.0	5.4	1060	3.8	3.9	6.0	3.7	1160	16.4	9.1	0.091	

File: 2-ULT-SF4.wb2 02/05/04

M**	D	92.0	0.8244	30.3	0.04739	100	1.0	6.0	1940	1.9	2.7	4.2	6.8	2040	21.5	13.8	0.138	
SITE	D	90.0	0.7980	490.9	0.76698	200	1.0	7.7	7130	5.0	4.5	6.8	18.0	7330	50.7	25.7	0.257	

Ti = 1.8 (1.1 - K) L^1/2 / S^1/3

K = 0.0132 (CN) - 0.39

V1 applies to the first 500 feet of travel distance;

V2 applies to the remaining travel distance.

Existing V2 = 29.4*(S/100)^1/2

Developed V2 = 30.6*(S/100)^1/2

REFERENCE :

STANDARD FORM 4

** Entire basin

* 2/3 OF 30.3 = 20.2

```
FLOOD HYDROGRAPH PACKAGE  (HEC-1)
          MAY   1991
        VERSION 4.0.1E
   Lahey F77L-EM/32 version 5.01
     Dodson & Associates, Inc.
 RUN DATE  02/03/04  TIME  08:07:58
```

```
U.S. ARMY CORPS OF ENGINEERS
HYDROLOGIC ENGINEERING CENTER
        609 SECOND STREET
      DAVIS, CALIFORNIA 95616
          (916) 551-1748
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX          XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

HEC-1 INPUT PAGE 1

```
LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

            *DIAGRAM
  1         ID   ***************************************************************
  2         ID   * ............................................................ *
  3         ID   * :                 SUMMERLIN VILLAGE 24                     : *
  4         ID   * :                                                          : *
  5         ID   * :                PROPOSED CONDITIONS                       : *
  6         ID   * :                  DEVELOPED ONSITE                        : *
  7         ID   * :                                                          : *
  8         ID   * :..........................................................: *
  9         ID   * :              RETURN PERIOD_ _ _ _10/100-YEAR             : *
 10         ID   * :              DISTRIBUTUION_ _ _ _6-HOUR SDN3             : *
 11         ID   * :              PROJECT NO_ _ _ _ _ 62024-001               : *
 12         ID   * :              FILENAME_ _ _ _ _ _  PROP-V24.H1            : *
 13         ID   * :              DATE_ _ _ _ _ _ _ _  1/26/04                : *
 14         ID   * :..........................................................: *
 15         ID
 16         ID        DEPTH AREA REDUCTION FACTOR
 17         ID                SQ MILES            DARF
 18         ID                   0-.1             1.0
 19         ID                  .1-.3            .988
 20         ID                  .3-.5            .980
 21         ID                  .5-.7            .976
 22         ID                  .7-.9            .972
 23         ID                10-YEAR            .575
 24         ID
 25         ID
 26         IT       5       0       0     300
 27         IO       5
 28         IN       5       0       0
 29         JR    PREC       1    .988    .980    .976    .972    .575
            *

 30         KK     L
 31         KM  SUBBASIN PARCEL L
 32         KM            AREA  15.0  ACRES
 33         BA  .02344
 34         PB    3.34
 35         PC    .000    .020    .057    .070    .087    .108    .124    .130    .130    .130
 36         PC    .130    .130    .130    .133    .140    .142    .148    .158    .172    .181
 37         PC    .190    .197    .199    .200    .201    .204    .214    .229    .241    .249
 38         PC    .251    .256    .270    .278    .281    .283    .295    .322    .352    .409
 39         PC    .499    .590    .710    .744    .781    .812    .819    .835    .851    .856
 40         PC    .860    .868    .876    .888    .910    .926    .937    .950    .970    .976
 41         PC    .982    .985    .987    .989    .990    .993    .993    .994    .995    .998
 42         PC    .998    .999    1.00
 43         LS       0      92
 44         UD    .101
            *

 45         KK      M
 46         KM  SUBBASIN PARCEL M
 47         KM            AREA  30.3  ACRES (USE 2/3 AREA 20.2 ACRES)
 48         BA  .03156
 49         PB    3.34
 50         LS       0      92
```

HEC-1 INPUT PAGE 2

```
LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 51         UD    .138
            *

 52         KK     CP1
 53         KM  C ONCENTRATION POINT CP1
 54         KM   COMBINE  L AND M
 55         HC       2
            *
```

```
56          KK      K
57          KM  SUBBASIN PARCEL K
58          KM              AREA  23.4  ACRES
59          BA  .04641
60          PB    3.34
61          LS       0      91
62          UD    .124
            *

63          KK     CP2
64          KM   CONCENTRATION POINT CP2
65          KM   COMBINE K AND CP1
66          HC       2
            *

67          KK   RCP1
68          KM  ROUTE CP1 TO CP3
69          RD     800    .028    .017            TRAP       0      50
            *

70          KK     ST4
71          KM  SUBBASIN STREET AREA ST4
72          KM              AREA  10.2  ACRES
73          BA  .01594
74          PB    3.34
75          LS       0      94
76          UD    .184
            *

77          KK    CP3
78          KM  CONCENTRATION POINT CP3
79          KM  COMBINE ST4 AND CP2
80          HC       2
            *

81          KK     ST6
82          KM  SUBBASIN SPOKE "A"
83          KM              AREA  1.5  ACRES
84          BA  .00234
85          PB    3.34
86          LS       0      94
87          UD    .075
            *
```



```
LINE        ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

88          KK    CP4
89          KM  CONCENTRATION POINT CP4
90          KM  COMBINE CP3 AND ST6
91          HC       2
            *

92          KK      M
93          KM  SUBBASIN PARCEL M
94          KM              AREA  30.3  ACRES (USE 2/3 AREA 20.2 ACRES)
95          BA  .03156
96          PB    3.34
97          LS       0      92
98          UD    .138
            *

99          KK    ES-1
100         KM  SUBBASIN PARCEL ES-1
101         KM              AREA  12.1  ACRES
102         BA  .01883
103         PB    3.34
104         LS       0      92
105         UD    .103
            *

106         KK    CP5
107         KM  CONCENTRATION POINT CP5
108         KM  COMBINE M AND ES-1 IN SKY VISTA
109         HC       2
            *

110         KK    CP6
111         KM  CONCENTRATION POINT CP6
112         KM  COMBINE CP5 AND CP4
113         HC       2
            *

114         KK      C
115         KM  SUBBASIN PARCEL C
116         KM              AREA  25.8  ACRES
117         BA  .04038
118         PB    3.34
119         LS       0      90
120         UD    .163
            *

121         KK   CP6
122         KM  CONCENTRATION POINT CP6
123         KM  COMBINE C AND CP5
124         HC       2
            *
```



```
LINE        ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

125         KK     ST2
```

```
126          KM  SUBBASIN SKY VISTA
127          KM            AREA  10.0  ACRES
128          BA  .01563
129          PB    3.34
130          LS       0      94
131          UD    .140
             *

132          KK     CP7
133          KM  CONCENTRATION POINT CP7
134          KM  COMBINE ST2 AND CP6
135          HC       2
             *

136          KK   COS-1
137          KM  SUBBASIN OPEN SPACE AREA COS-1
138          KM            AREA  3.1  ACRES
139          BA  .00484
140          PB    3.34
141          LS       0      86
142          UD    .083
             *

143          KK   COS-2
144          KM  SUBBASIN OPEN AREA COS-2
145          KM            AREA  2.2  ACRES
146          BA  .00344
147          PB    3.34
148          LS       0      86
149          UD    .085
             *

150          KK     CP8
151          KM  CONCENTRATION POINT CP8
152          KM   COMBINE COS-1 AND COS-2
153          HC       2
             *

154          KK     CP9
155          KM  CONCENTRATION POINT CP9
156          KM  COMBINE CP7 AND CP8
157          HC       2
             *

158          KK       D
159          KM  SUBBASIN PARCEL D
160          KM            AREA  33.5  ACRES
161          BA  .05230
162          PB    3.34
163          LS       0      91
164          UD    .159
             *
```



```
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

165          KK    CP10
166          KM  CONCENTRATION POINT CP10
167          KM  COMBINE CP9 AND D IN DESERT MOON
168          HC       2
             *

169          KK       E
170          KM  SUBBASIN PARCEL E
171          KM            AREA  32.2  ACRES
172          BA  .05036
173          PB    3.34
174          LS       0      91
175          UD    .151
             *

176          KK    NP-1
177          KM  SUBBASIN PARK AREA NP-1
178          KM            AREA  9.8  ACRES
179          BA  .01531
180          PB    3.34
181          LS       0      82
182          UD    .132
             *

183          KK   CP11
184          KM  CONCENTRATION POINT CP11
185          KM  COMBINE E AND NP-1
186          HC       2
             *

187          KK    CP12
188          KM  CONCENTRATION POINT CP12
189          KM  COMBINE CP11 AND CP10
190          HC       2
             *

191          KK     ST5
192          KM  SUBBASIN DESERT MOON ROAD ST5
193          KM            AREA  16.3  ACRES
194          BA  .02541
195          PB    3.34
196          LS       0      94
197          UD    .204
             *

198          KK   CP13
199          KM  CONCENTRATION POINT CP13
200          KM  COMBINE ST5 AND CP12
```

```
LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  202     KK   RCP13
  203     KM  ROUTE CP13 THROUGH COS-6
  204     RD     908    .066    .025           TRAP       0      50
          *

  205     KK      B
  206     KM  SUBBASIN PARCEL B
  207     KM             AREA  31.1  ACRES
  208     BA  .04859
  209     PB    3.34
  210     LS       0      91
  211     UD    .120
          *

  212     KK   COS-5
  213     KM  SUBBASIN OPEN AREA COS-5
  214     KM             AREA  0.9  ACRES
  215     BA  .00141
  216     PB    3.34
  217     LS       0      86
  218     UD    .090
          *

  219     KK   CP14
  220     KM  CONCENTRATION POINT CP14
  221     KM  COMBINE CP13, B, AND COS-5
  222     HC       3
          *

  223     KK      A
  224     KM  SUBBASIN PARCEL A
  225     KM             AREA  39.9  ACRES
  226     BA  .06234
  227     PB    3.34
  228     LS       0      90
  229     UD    .150
          *

  230     KK    ST3A
  231     KM  SUBBASIN STREET AREA FOR SKY VISTA
  232     KM             AREA    ACRES
  233     BA  .00609
  234     PB    3.34
  235     LS       0      94
  236     UD    .052
          *

  237     KK   CP15
  238     KM  CONCENTRATION POINT CP15
  239     KM  COMBINE ST3A AND A
  240     HC       2
          *
```



```
LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  241     KK   CP16
  242     KM  CONCENTRATION POINT CP16
  243     KM  COMBINE CP14 AND CP15
  244     HC       2
          *

  245     KK      J
  246     KM  SUBBASIN PARCEL J
  247     KM             AREA  42.96  ACRES
  248     BA  .06713
  249     PB    3.34
  250     LS       0      91
  251     UD    .165
          *

  252     KK      I
  253     KM  SUBBASIN PARCEL I
  254     KM             AREA  40.5  ACRES
  255     BA  .06328
  256     PB    3.34
  257     LS       0      91
  258     UD    .143
          *

  259     KK    CP18
  260     KM  CONCENTRATION POINT CP18
  261     KM  COMBINE J AND I
  262     HC       2
          *

  263     KK      G
  264     KM  SUBBASIN PARCEL G
  265     KM             AREA  42.7  ACRES
  266     BA  .06672
  267     PB    3.34
  268     LS       0      86
  269     UD    .159
          *

  270     KK      H
  271     KM  SUBBASIN PARCEL H
```

```
272          KM           AREA  22.1  ACRES
273          BA  .03453
274          PB    3.34
275          LS       0      86
276          UD    .106
             *

277          KK   CP19
278          KM  CONCENTRATION POINT CP19
279          KM  COMBINE G AND H
280          HC       2
             *
```



```
LINE         ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

281          KK   COS-3
282          KM  SUBBASIN OPEN SPACE AREA COS-3
283          KM           AREA  5.2  ACRES
284          BA  .00813
285          PB    3.34
286          LS       0      86
287          UD    .078
             *

288          KK    CP19
289          KM  CONCENTRATION POINT CP19
290          KM  COMBINE CP18, CP19, AND COS-3
291          HC       3
             *

292          KK   RCP19
293          KM  ROUTE CP19 THROUGH COS-4
294          RD    2906    .060    .025           TRAP       0      50
             *

295          KK      F
296          KM  SUBBASIN PARCEL F
297          KM           AREA  38.0  ACRES
298          BA  .05938
299          PB    3.34
300          LS       0      86
301          UD    .141
             *

302          KK   CP20
303          KM  CONCENTRATION POINT CP20
304          KM  COMBINE F AND CP19
305          HC       2
             *

306          KK   COS-4
307          KM  SUBBASIN OPEN SPACE AREA COS-4
308          KM           AREA  9.1  ACRES
309          BA  .01422
310          PB    3.34
311          LS       0      86
312          UD    .068
             *

313          KK   CP21
314          KM  CONCENTRATION POINT CP21
315          KM  COMBINE CP20, CP17, AND COS-4
316          HC       3
             *
```



```
LINE         ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

317          KK    ST1
318          KM  SUBBASIN ALTA DRIVE ST1
319          KM           AREA  9.2 ACRES
320          BA  .01434
321          PB    3.34
322          LS       0      94
323          UD    .093
             *

324          KK    ST3B
325          KM  SUBBASIN COLLECTOR ROAD ST-3
326          KM           AREA  2.9  ACRES
327          BA  .00406
328          PB    3.34
329          LS       0      94
330          UD    .050
             *

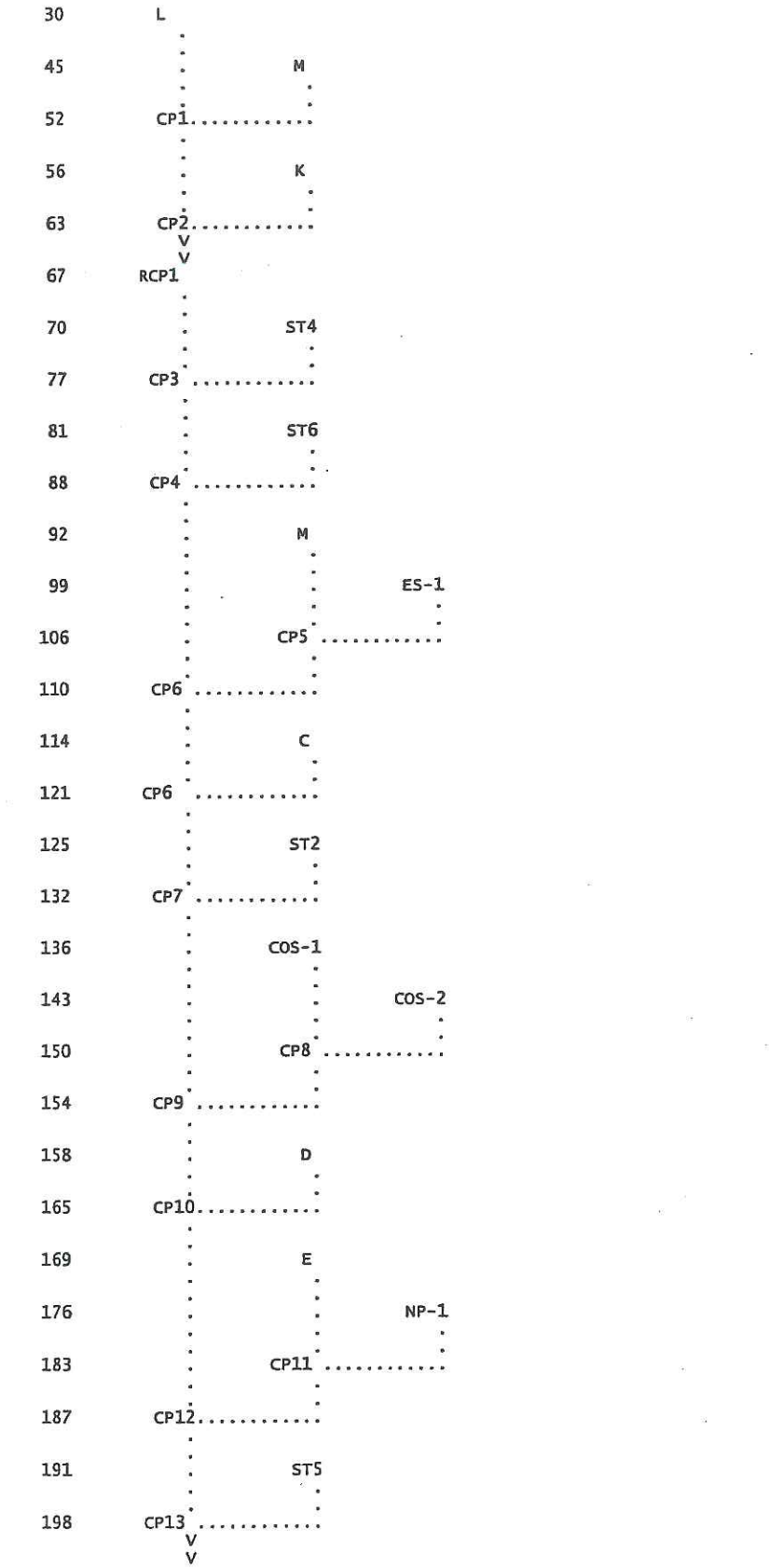
331          KK  PARCELA
332          KM  SUBBASIN SECTION OF PARCEL A DRAINING TO CHARLESTON
333          KM           AREA  4.3  ACRES
334          BA  .00672
335          PB    3.34
336          LS       0      90
337          UD    .091
             *

338          KK    CP23
339          KM  CONCENTRATION POINT CP23
340          KM  COMBINE ST8 AND A PORTION OF PARCEL A IN CHARLESTON BLVD.
341          HC       2
             *

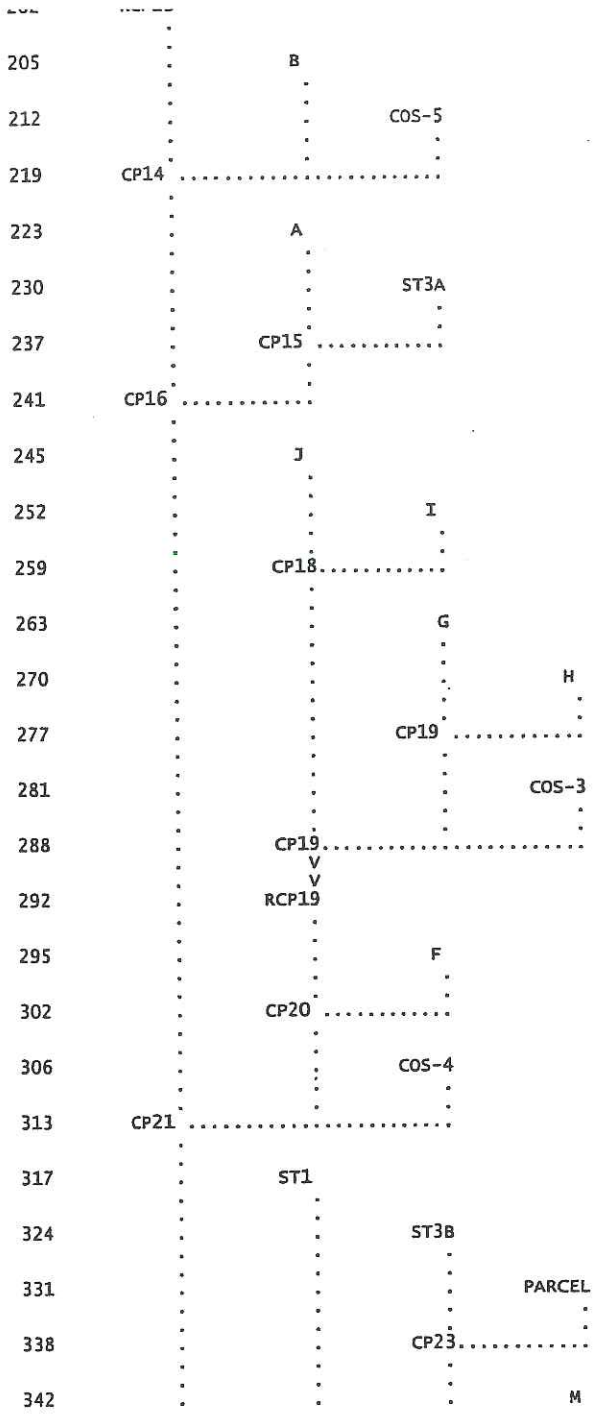
342          KK      M
```

```
344           KM                AREA  30.3  ACRES (FOR MAXMIMUM DISCHARGE ONLY)
345           BA  .04739
346           PB    3.34
347           LS       0       92
348           UD    .138
              *
349           ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK



```
205          B
212                  COS-5
219    CP14
223          A
230                  ST3A
237          CP15
241    CP16
245          J
252                  I
259          CP18
263                  G
270                          H
277                  CP19
281                          COS-3
288          CP19
292          RCP19
295                  F
302          CP20
306                  COS-4
313    CP21
317          ST1
324                  ST3B
331                          PARCEL
338                  CP23
342                          M
```



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              MAY   1991               *
*           VERSION 4.0.1E              *
*     Lahey F77L-EM/32 version 5.01     *
*       Dodson & Associates, Inc.       *
*  RUN DATE  02/03/04  TIME  08:07:58   *
*****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*           (916) 551-1748              *
*                                       *
*****************************************
```

```
*****************************************************************
*                                                               *
*                  SUMMERLIN VILLAGE 24                         *
*                                                               *
*                  PROPOSED CONDITIONS                          *
*                    DEVELOPED ONSITE                           *
*                                                               *
*                                                               *
*                                                               *
*                RETURN PERIOD_ _ _ _10/100-YEAR                *
*                DISTRIBUTUION_ _ _ _6-HOUR SDN3                *
*                PROJECT NO_ _ _ _ _ 62024-001                  *
*                FILENAME_ _ _ _ _ _  PROP-V24.H1               *
*                DATE_ _ _ _ _ _ _ _  1/26/04                   *
```

DEPTH AREA REDUCTION FACTOR

SQ MILES	DARF
0-.1	1.0
.1-.3	.988
.3-.5	.980
.5-.7	.976
.7-.9	.972
10-YEAR	.575

27 IO OUTPUT CONTROL VARIABLES

IPRNT	5	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

IT HYDROGRAPH TIME DATA

NMIN		5	MINUTES IN COMPUTATION INTERVAL
IDATE	1	0	STARTING DATE
ITIME		0000	STARTING TIME
NQ		300	NUMBER OF HYDROGRAPH ORDINATES
NDDATE	2	0	ENDING DATE
NDTIME		0055	ENDING TIME
ICENT		19	CENTURY MARK

COMPUTATION INTERVAL 0.08 HOURS
TOTAL TIME BASE 24.92 HOURS

ENGLISH UNITS

DRAINAGE AREA	SQUARE MILES
PRECIPITATION DEPTH	INCHES
LENGTH, ELEVATION	FEET
FLOW	CUBIC FEET PER SECOND
STORAGE VOLUME	ACRE-FEET
SURFACE AREA	ACRES
TEMPERATURE	DEGREES FAHRENHEIT

JP MULTI-PLAN OPTION
NPLAN 1 NUMBER OF PLANS

JR MULTI-RATIO OPTION
RATIOS OF PRECIPITATION
1.00 0.99 0.98 0.98 0.97 0.57

1

PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

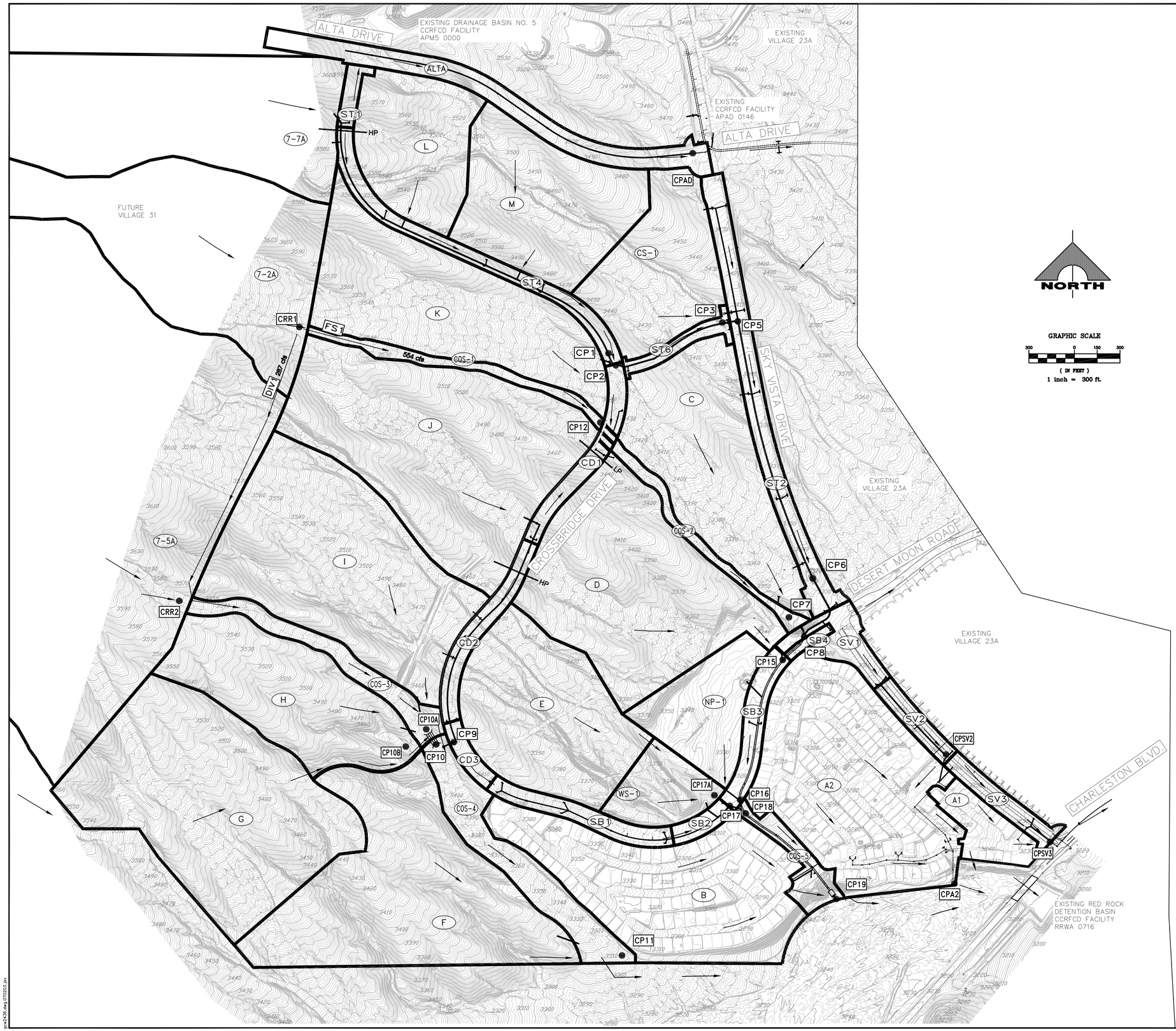
OPERATION	STATION	AREA	PLAN		RATIOS APPLIED TO PRECIPITATION RATIO 1 1.00	RATIO 2 0.99	RATIO 3 0.98	RATIO 4 0.98	RATIO 5 0.97	RATIO 6 0.57
HYDROGRAPH AT	L	0.02	1	FLOW	50.	49.	49.	48.	48.	24.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT	M	0.03	1	FLOW	63.	62.	62.	61.	61.	31.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT	CP1	0.05	1	FLOW	109.	108.	107.	106.	106.	54.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	K	0.05	1	FLOW	91.	90.	89.	89.	88.	44.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT	CP2	0.10	1	FLOW	201.	198.	196.	195.	194.	99.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
ROUTED TO	RCP1	0.10	1	FLOW	199.	196.	194.	193.	192.	97.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	ST4	0.02	1	FLOW	31.	31.	30.	30.	30.	16.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT	CP3	0.12	1	FLOW	230.	226.	224.	223.	222.	113.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	ST6	0.00	1	FLOW	6.	6.	6.	6.	6.	3.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT	CP4	0.12	1	FLOW	234.	231.	228.	228.	226.	115.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	M	0.03	1	FLOW	63.	62.	62.	61.	61.	31.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	ES-1	0.02	1	FLOW	40.	39.	39.	39.	38.	19.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT										

				TIME	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT	CP6	0.17	1	FLOW	335.	330.	327.	325.	324.	165.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	C	0.04	1	FLOW	74.	73.	72.	72.	71.	34.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT	CP6	0.21	1	FLOW	409.	402.	398.	397.	395.	199.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	ST2	0.02	1	FLOW	33.	32.	32.	32.	32.	17.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT	CP7	0.23	1	FLOW	441.	435.	430.	429.	426.	216.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	COS-1	0.00	1	FLOW	9.	9.	9.	9.	9.	4.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT	COS-2	0.00	1	FLOW	6.	6.	6.	6.	6.	3.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT	CP8	0.01	1	FLOW	16.	15.	15.	15.	15.	7.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT	CP9	0.23	1	FLOW	454.	448.	443.	441.	439.	222.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	D	0.05	1	FLOW	99.	98.	97.	96.	96.	47.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT	CP10	0.29	1	FLOW	553.	545.	540.	537.	535.	269.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	E	0.05	1	FLOW	97.	95.	94.	94.	93.	46.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	NP-1	0.02	1	FLOW	22.	22.	22.	21.	21.	8.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT	CP11	0.07	1	FLOW	119.	117.	116.	115.	115.	55.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT	CP12	0.35	1	FLOW	672.	662.	656.	653.	649.	324.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	ST5	0.03	1	FLOW	47.	46.	46.	46.	46.	24.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT	CP13	0.38	1	FLOW	719.	709.	702.	698.	695.	348.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
ROUTED TO	RCP13	0.38	1	FLOW	708.	694.	690.	684.	680.	337.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	B	0.05	1	FLOW	96.	94.	93.	93.	92.	46.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	COS-5	0.00	1	FLOW	3.	3.	3.	3.	2.	1.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT	CP14	0.43	1	FLOW	806.	791.	785.	779.	775.	385.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	A	0.06	1	FLOW	116.	115.	113.	113.	112.	54.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	ST3A	0.01	1	FLOW	16.	16.	16.	16.	16.	8.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT	CP15	0.07	1	FLOW	126.	124.	122.	122.	121.	59.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT	CP16	0.50	1	FLOW	931.	914.	907.	901.	896.	444.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	J	0.07	1	FLOW	126.	124.	123.	122.	121.	60.

				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	I	0.06	1	FLOW	123.	121.	120.	119.	119.	59.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT	CP18	0.13	1	FLOW	249.	245.	242.	241.	240.	119.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	G	0.07	1	FLOW	108.	106.	105.	104.	103.	45.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	H	0.03	1	FLOW	59.	58.	58.	57.	57.	25.
				TIME	3.50	3.50	3.50	3.50	3.50	3.58
2 COMBINED AT	CP19	0.10	1	FLOW	166.	163.	161.	160.	159.	69.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	COS-3	0.01	1	FLOW	16.	15.	15.	15.	15.	7.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT	CP19	0.24	1	FLOW	427.	421.	416.	414.	412.	194.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
ROUTED TO	RCP19	0.24	1	FLOW	403.	397.	393.	391.	389.	194.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT	F	0.06	1	FLOW	99.	97.	96.	96.	95.	41.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT	CP20	0.30	1	FLOW	485.	477.	472.	470.	467.	229.
				TIME	3.67	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT	COS-4	0.01	1	FLOW	29.	28.	28.	28.	27.	12.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT	CP21	0.81	1	FLOW	1436.	1411.	1399.	1389.	1381.	661.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT	ST1	0.01	1	FLOW	33.	32.	32.	32.	32.	17.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT	ST3B	0.00	1	FLOW	11.	11.	11.	10.	10.	6.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT	PARCELA	0.01	1	FLOW	14.	14.	14.	14.	14.	7.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT	CP23	0.01	1	FLOW	25.	24.	24.	24.	24.	12.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT	M *	0.05	1	FLOW	95.	93.	93.	92.	92.	47.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58

* maximum discharge from Parcel M.

*** NORMAL END OF HEC-1 ***



NORTH

GRAPHIC SCALE

300 0 150 300

(IN FEET)

1 inch = 300 ft.

SUMMARY OF ULTIMATE CONDITIONS HEC-1 MODEL

SC OR CP	AREA (ac.)	Q_{100} (cfs)	Q_{10} (cfs)
ALTA	9.8	35	18
-	-	-	-
7-2A	288.8	687	315
7-2B	60.4	182	82
7-5A	190.0	506	225
7-7A	51.8	153	70
A1	4.6	14	6
A2	34	100	47
B	30.5	90	43
C	25.2	62	25
CD1	4.2	15	8
CD2	3.1	10	5
CD3	1.3	6	3
COS-1	3.2	8	3
COS-2	2.7	6	2
COS-3	5.6	14	5
COS-4	10.2	23	8
COS-5	2.2	7	3
CP1	-	262	125
CP10	-	1030	452
CP10A	-	800	350
CP10B	-	155	63
CP11	-	1119	490
CP12	-	543	251
CP15	-	1023	479
CP16	-	1019	490
CP17	-	97	43
CP17A	-	81	35
CP18	-	1100	527
CP19	-	1168	559
CP2	-	354	164
CP3	-	356	165
CP5	-	408	192
CP6	-	435	204
CP7	-	595	274
CP8	-	949	446
CP9	-	120	51
CPA2	-	114	54
CPAD	-	40	21
CPSV2	-	23	12
CPSV3	-	25	12
CRR1	-	841	386
CRR2	-	720	313
CS-1	16.8	55	27
D	34.3	87	36
DIV1	-	287	132
E	23.9	63	26
F	37.8	92	36
FS1	-	554	255
G	42.6	100	39
H	22.1	58	24
I	38.7	102	43
J	43.6	110	46
K	29.6	80	34
L	15.5	53	26
M	22.0	73	36
NP-1	10.5	22	8
RETD1	-	287	132
SB1	3.6	14	8
SB2	1.3	5	3
SB3	3.5	13	7
SB4	0.5	2	1
ST1	1.1	5	2
ST2	9.6	33	17
ST4	6.0	22	12
ST6	1.8	8	4
SV1	3.6	14	8
SV2	2.1	9	4
SV3	2.7	11	6
WS-1	6.3	20	10

LEGEND

- SUBBASIN BOUNDARY
- ST1 SUBBASIN DESIGNATION
- CP1 COMBINATION POINT
- FLOW DIRECTION/DIVERSION

% COMPLETE

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GOW APP	DATE

PROJECT NO. 62024-320

DESIGN: RRD, DBC
DRAWN:
CHECK:
PLOT DATE: 06-10-14
PLOT TIME: 15:23:20

G.C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
1555 S. RAINBOW BLVD. LAS VEGAS, NV 89146
T: 702.804.2000 F: 702.804.2299 GCWALLACE.COM
LAS VEGAS

F:\Projects\600\62024-320\Division\Civil\Figures\FIG6U.dwg
David Clark

THE HOWARD HUGHS COMPANY, LLC

SUMELRIN VILLAGE 24

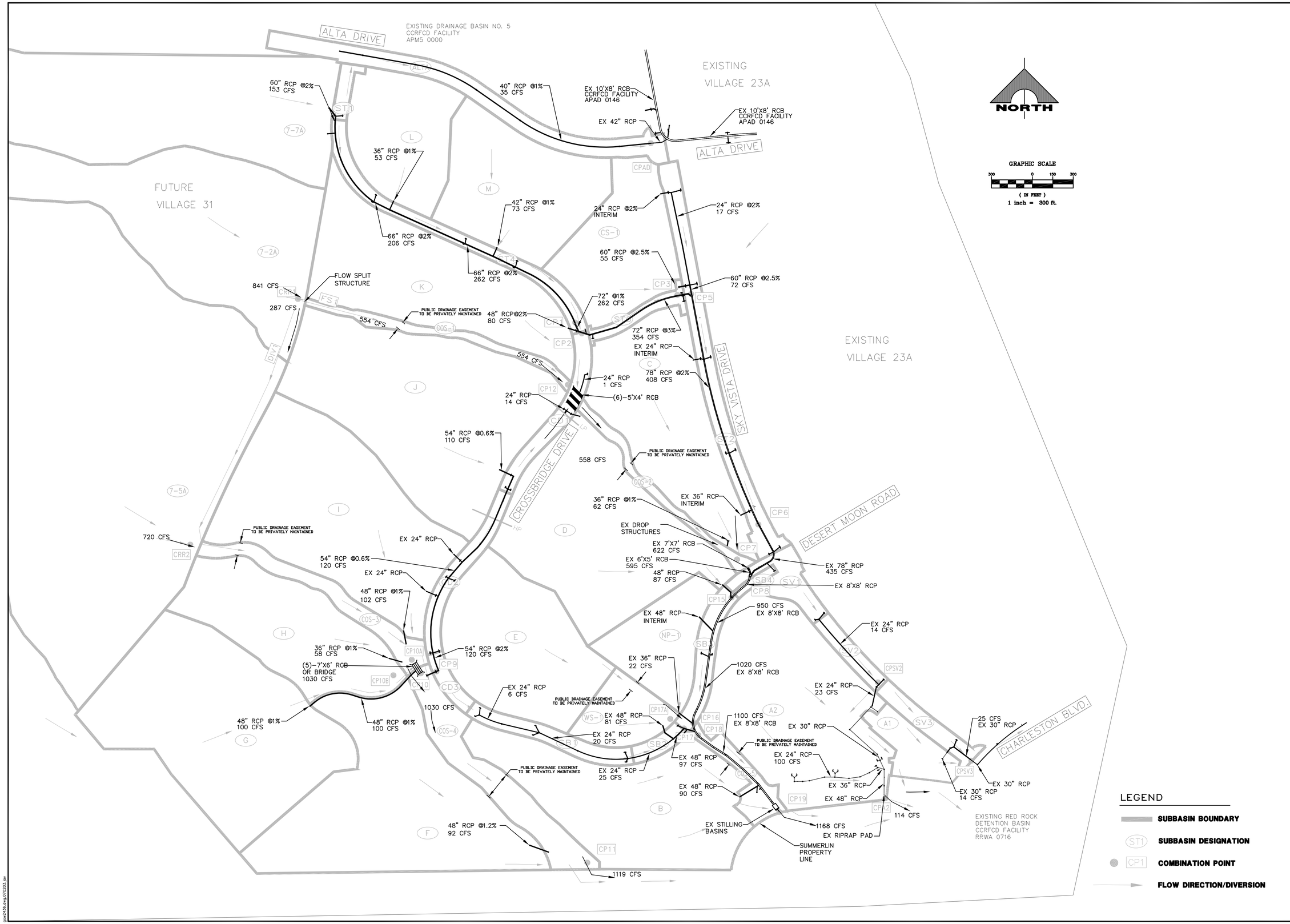
FIGURE 6U
ULTIMATE CONDITIONS DRAINAGE MAP

DRAWING
FIG 6U
OF XX SHTS

LD#:

HTE: 00-00000

zone2426.dwg 07/2023.pw



% COMPLETE

REV	DATE	DESCRIPTION	DATE	AGEN APP	DATE	GCW APP	DATE

PROJECT NO. 62024-320

DESIGN: RRD, DBC
DRAWN:
CHECK:
PLOT DATE: 06-10-14
PLOT TIME: 15:24:02

G.C. WALLACE COMPANIES
ENGINEERS | PLANNERS | SURVEYORS
1555 S. RAINBOW BLVD · LAS VEGAS, NV 89146
T: 702.804.2000 · F: 702.804.2299 · GCWALLACE.COM

LAS VEGAS

F:\Projects\600\62024-320\Division\Fctl\Figures\FIG8U.dwg
David Clark

THE HOWARD HUGHS COMPANY, LLC

SUMELRIN VILLAGE 24

FIGURE 8U
PROPOSED FACILITES DRAINAGE MAP

DRAWING
FIG 8U
OF XX SHTS

LID#:

HTE: 00-00000