PRELIMINARY DRAINAGE REPORT
2nd Submittal

For

SENIOR LIVING
NEC SCOTTSDALE ROAD & PINNACLE PEAK ROAD
SCOTTSDALE, ARIZONA

October 5, 2016
Revised December 8, 2016

Project No.: 2098

Plan # _____
Case # 30-DR-2016
Q-S # _____
☑ Accepted
☐ Corrections
N. Baronas
Reviewed By Date

Prepared for:

INVESTMENTS PROPERTY ASSOCIATES, LLC
1600 SOUTH BEACON BOULEVARD, SUITE 260
GRAND HAVEN, MI 49417

CONTACT: JEAN CONSTANTINE

TEL: 616-850-1058

Prepared by:

Site Consultants, Inc.
Engineers • Surveyors • Consultants
113 South Rockford Drive • Tempe, AZ 85281
Tel (480) 894-2820 • Fax (480) 894-2847

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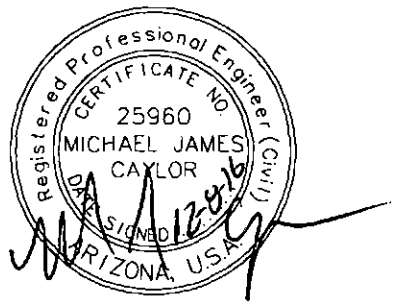
ATTACHMENTS



Expires 3-31-2019

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Note: This page left intentionally blank for future supplemental CMP "Estimated Design Life" letter from manufacturer.

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1.0 INTRODUCTION AND SCOPE OF WORK

This report presents the results of a drainage study conducted by Site Consultants, Inc. (SCI) at the request of Investment Property Associates, LLC (client) for a new Senior Living facility located at northeast corner of Scottsdale Road and Pinnacle Peak Road (site) which lies north of the existing Crown West (Safeway) shopping center. The purpose of this report is to provide an analysis of the proposed site re-development's impact, if any, on the existing surrounding site developments off-site and on-site drainage patterns and existing on-site retention facilities

1.1 Scope of Work and Limitations

This report is focused on providing practical design information, evaluation, and calculations for statistical flood events up to and including the 100-year frequency flood. The procedures used herein are derived from, and performed with, currently accepted engineering methodologies and practices. Additionally, the criterion for this evaluation is designed to conform to currently applicable ordinances, regulations and policies affected by the appropriate jurisdictional regulatory authorities for the site.

The analysis presented herein focuses on developing design estimates of stormwater runoff resulting from a statistical evaluation of storm events of particular duration and frequency up to and including a 100-year frequency event. A storm event exceeding the 100-year frequency event may cause or create the risk of greater flood impact than is addressed and presented herein. However, the scope of this assessment does not include, neither did the client request, evaluation of stormwater runoff resulting from storm events exceeding the 100-year frequency event. Site Consultants, Inc. assumes no responsibility for actual flood damage, increased risks of flood damage, or increased construction or development cost resulting from or related to any such events. Nor shall SCI be responsible for any changes in or additions to, regulatory requirements that may result from, or be related to, any such events or changes in hydrologic or hydraulic conditions within the watershed.

In performing the services contained herein, SCI has or will receive information prepared or compiled by others. SCI as engineering professionals, are not required to verify the information, but may rely on the information unless actual knowledge concerning the validity of the information is known or is obvious to the professional. Therefore, SCI is entitled to rely upon the accuracy and completeness of this information without independent evaluation or verification.

1.2 Site Location

The approximately 4.5 net acres project is approximately located at the northeast corner of Scottsdale and Pinnacle Peak Road, north of the existing Crown West (Safeway) shopping center.

The subject property lies within the SW ¼ of Section 11, Township 4 North, Range 4 East, of the Gila and Salt River Base and Meridian, Maricopa County (MCR), Scottsdale, Arizona. The site is Parcel 'B' and a portion of Parcel 'A' of the Crown West Land Division Land Map, as recorded in the Bk. 857, Pg. 19, and MCR.

Residential subdivisions borders the site to the north and east; commercial developments borders the site to the south and west.

See Attachment No. 1 for Site Vicinity Map.

1.3 Existing Site Development Area Improvements

The site development area is currently developed as commercial office building development which functioned as the corporate headquarters for Giant Industries, Inc. Improvements included the commercial office building, parking garage and required utility infrastructure that connected to City's utility infrastructure in Scottsdale Road.

See Attachment No. 2 for existing ALTA/ACSM Land Title Survey.

The site development area is currently developed and is a portion of a larger as commercial office building development which functioned as the corporate headquarters for Giant Industries, Inc. Improvements included the commercial office building, parking garage and required utility infrastructure that connected to City's utility infrastructure in Scottsdale Road. The parent parcel has been subdivide and the redevelopment area is confined to the area occupied by the commercial office building and

1.4 Proposed Re-Development Area Description

The parent parcel for the original development has been divided into three parcels; the redevelopment area consist of two parcels located in the eastern portion of the said parent parcel. The said existing commercial office building is located within those parcels. The said parking garage is not located on the senior living parcel, it is located in the third parcel located west of the senior living facility.

The proposed site redevelopment will consist of the demolishing the said existing commercial office building and the construction of a new senior living facility that includes both a memory care wing and an independent living facility with associated amenities, ie. two outdoor courtyards and a dog park. Redevelopment will also include construction of associated utility infrastructure, permanent stormwater retention facilities, landscape areas and pedestrian connections to adjacent development to the west and south.

See Attachment No. 3 for "Site Plan".

1.5 Regulatory Jurisdiction

The criterion used in the drainage design and analysis of the site was established using the guidelines as described in the following:

- *Drainage Standards and Policies Manual for City of Scottsdale, dated, January 2010.* **(Reference 1).**

2.0 PHYSICAL SETTING

2.1 Existing Site Topography

As noted in Section 1.3 the proposed site redevelopment area is currently a development commercial office building. The site generally slopes from north-northeast (elevation 1875-feet) to south-southeast (elevation 1859.00-feet).

See Attachment No. 4 for development area topographic map.

3.0 DESCRIPTION OF EXISTING OFF-SITE STORMWATER RUNOFF

3.1 Off-Site: Regional Drainage:

Regional drainage is generally from north-northeast to south-southeast. The existing Giant Industries building project had not adjacent developments constructed north and northeast of the site.

See Attachment No. 5 for excerpt from Giant Industries Grading and Drainage plans.

Since there were no adjacent developments the Giant Industries project accommodated offsite flows form the north-northeast of the development.

See Attachment No. 6 for excerpt from Giant Industries Drainage Report.

The offsite flows are conveyed onto the site via wall opening in the perimeter CMU wall.

Currently the adjacent parcels located north-northeast, east and west of the site re-development have been developed or are under construction.

NORTH & EAST:

Premiere at Pinnacle Peak is a residential subdivision located to north and east of redevelopment area. Stormwater entering the site from the north are now being conveyed to Scottsdale Road via East Camino Del Monte (street) and concrete lined drainage channels. Stormwater from east is conveyed via subdivision streets into the Scottsdale Wash.

NORTHEAST:

Pinnacle Peak Villas is a residential subdivision located to northeast of redevelopment area. Stormwater previously entering the site from the northeast is now retained in existing on-site surface landscape retention basins. The landscape basins were sized based on a 100 yr – 1hr storm with and intensity of 2.45 and a weighted 'C' value of 0.35. The required retention volumes have been recomputed based on current NOAA14 data based on a 100yr – 2hr storm events with an intensity of 2.41 and a weighted 'C' of 0.35.

See Attachment No. 7 excerpt from drainage report for Pinnacle Peak Villas documenting the 100 yr -1 hr design storm / 2.45 'C' value / 0.35 Weighted 'C'

The landscape retention basin adjacent to the northeast corner of the site development area has a 100 yr – 2 hr storm event retention requirement of 6,404 cf and a highwater elevation of 1874.10. The existing wall opening located at the northeast corner of the redevelopment area, at the retention basin location is 1874.18 feet. Therefore, in the event of a 100-yr, 2 hr storm event the runoff is fully contained in the basin. In the event of a back to back 100 –yr, 2 hr storm event the highwater elevation of the basin is elevated to 1875.10 which provides for 1-foot of head above the invert of the existing wall opening.

See Attachment No. 16 for Pre vs. Post Q_{100} Run-off Calculations.

Note: Hydrology and Hydraulic Calculations based on: Hydra flow Extension for AutoCAD Civil 3D

5.2 Special Conditions – Finish Floor Determination

The proposed developments is located in FEMA Flood Zone 'AO". The proposed developments use will be restricted to senior living only; there will be no on-site surgery or emergency treatment facilities. Therefore based on FEMA Classifications of Structures; the proposed finish floor elevations for structures, located in FEMA Flood Zone 'AO', with no on-site surgery or emergency treatment facilities, are required to be 2-feet above the Highest Natural Grade. It is SCI's understanding that USGS Mapping, provides the best available data to document the Highest Adjacent Natural Grade (HAG).

See Attachment No. 20 for a letter from ownership stating development use is limited to senior living with no on-site surgery or emergency treatment facilities.

See Attachment No. 13 for proposed site development site plan overlaid on USGS Elevations.

Based on the mapping in Attachment No. 13 the Highest Adjacent Grade is located at the northeast corner of the Building 'A' and is 1871.83 –feet.

Therefore the finish floor elevation of Building 'A' will be 1871.83 feet + 2 feet = 1873.83 **used 1873.83 – feet.**

Due to the sloping terrain and the proximity to the neighborhood; the second building for the project development Building 'B', located at the southeast corner of the site was stepped.

Note: Buildings 'A' and Buildings 'B' are two completely independent structures.

Based on the mapping in Attachment No. 13 the Highest Adjacent Grade located adjacent to the northeast building corner of the Building 'B' is 1867.60 –feet.

Therefore the main floor elevation will be 1867.60 feet + 2 feet = 1869.60 **used 1869.83 – feet** to comply with FEMA single family housing administration development requirements.

6.0 DESCRIPTION OF PROPOSED OFF-SITE STORMWATER RUNOFF

6.1 Proposed Off-Site Hydrology – Redevelopment Area

As noted in **Section 3.1 NORTHEAST** above, there is a wall opening at elevation 1874.18 feet that is above the 100 yr – 2 hr storm event highwater elevation for the adjacent subdivision retention basin. However, in the event of a back to back 100 yr – 2 hr storm event the highwater elevation will rise to 1875.10 approximately 1-foot above the wall opening. At 1-foot of head approximately 2.2 cfs of water will be conveyed through the wall opening.

The offsite stormwater and on-site surface sheet flow in that area will be convey in the landscape drainage channel to the southeast corner of the site into the single catch basin. Assuming a depth of 0.5 feet the single catch basin (bleed off) has a capacity of 12.4 cfs which will dissipate the 7.82 cfs (computed based on a 50% clogging factor) of runoff being conveyed in the channel into the Crown West (Safeway) shopping center parking lot.

See Attachment 14 for Wall Opening / Open Channel

7.0 FLOOD ZONE INFORMATION

The Maricopa County, Arizona and Incorporated Areas Flood Insurance Rate Map (FIRM) map number 04013C1320L, dated October 16, 2013, indicates that the site falls within Zone 'AO'. Zone 'AO' is defined by FEMA as:

> "Special Flood Hazard Area" (SFHAs) subject to inundation by the 1% annual chance flood. Average Flood depth of 1 foot as determined per FIRM map. Velocities of 3-fps as determined on FIRM map.

See Attachment No. 15 for Firm Map.

8.0 SUMMARY AND CONCLUSIONS

1. Proposed grading design will safely convey stormwater runoff past the proposed site re-development area.
2. Stormwater runoff generated on-site will be directed to retention basin.
3. Finished floors for structures situated on the site will be established at an elevation that meets or exceeds the two foot minimum requirement above the Highest Adjacent Natural Grade as documented by USGS mapping.
4. Drainage patterns on and around the site will not be altered.
5. Building and mechanical equipment pads are to 1.0' above the Regulatory Flood Depth Elevation (R.F.D.) set at RFD Base

9.0 REFERENCES CITED AND REVIEWED

1. *City of Scottsdale Case 139-DR-87. Final Drainage Report prepared for Giant Industries, Inc., prepared by Brooks, Hersey and Associates Inc. dated December, September 1988*
2. *City of Scottsdale Case Number 139-DR-87. Grading and Drainage Plans Report for Giant Industries Inc, prepared by Brooks, Hersey and Associates Inc.,. dated October, 1988.*
3. *Drainage Report for Pinnacle Peak Villas, prepared by American Engineering dated, February 1987.*
4. *City of Scottsdale Case 44-PP-86, Grading and Drainage Plans for Pinnacle Peak Villas, prepared by American Engineering dated, June 1987.*
5. *City of Scottsdale Case 44-PP-86, Grading and Drainage Plans for Pinnacle Peak Villas, prepared by Keogh Engineering dated, June 1991.*

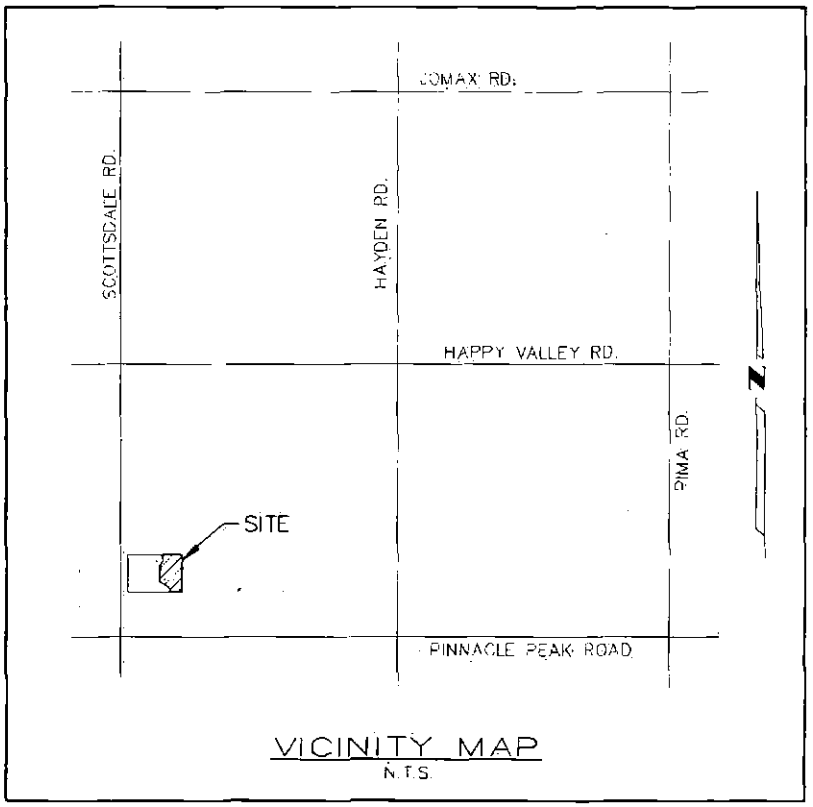
6. *City of Scottsdale Case 84-DR-91, Grading and Drainage Plans for Premiere at Pinnacle Peak, prepared by Keogh Engineering..*
7. *Flood Insurance Rate Map (FIRM) Maricopa County, Arizona and Incorporated Areas, Map Number 04013C1320L, Federal Emergency Management Agency, November 16, 2013.*

This document was prepared by the following:

Printed/Typed Name: Michael J. Caylor, P.E.

Date: September, 2016

Attachment No. 1



VICINITY MAP

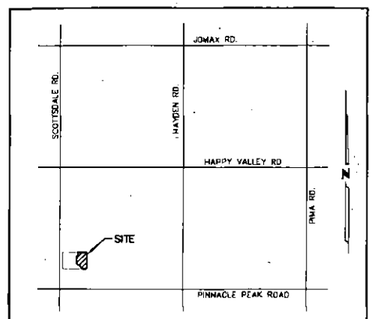
N.T.S.

Attachment No. 2

23733 NORTH SCOTTSDALE ROAD

ALTA/NSPS LAND TITLE SURVEY

BEING A PORTION OF THE SOUTHWEST QUARTER OF SECTION 11, TOWNSHIP 4 NORTH, RANGE 4 NORTH, OF THE GILA & SALT RIVER BASE & MERIDIAN, MARICOPA COUNTY, ARIZONA



VICINITY MAP
N.T.S.

LEGEND

- PROPERTY LINE
- RIGHT OF WAY LINE
- CENTER LINE
- EASEMENT LINE
- B.P. BARRIER POST
- LIGHT W/BASE
- SIGN
- E.CAB. ELECTRIC CABINET
- E.T. ELECTRIC TRANSFORMER
- S.L.B. POWER POLE W/LIGHT
- G.M. GAS METER
- UNDERGROUND SEWER
- S.C.O. SEWER CLEAN-OUT
- SEWER MANHOLE
- DRAIN MANHOLE
- R.D. ROOF DRAIN
- W.M. WATER METER
- W.V. WATER VALVE
- F.H. FIRE HYDRANT
- F.D.C. FIRE RISER
- R.P.V. REDUCE PRESSURE VAVLE
- SAGUARO CACTUS
- C.O.S. CITY OF SCOTTSDALE
- FND. FOUND
- R.O.W. RIGHT OF WAY
- M.C.R. MARICOPA COUNTY RECORDER OFFICE
- A.P.N. ASSESSOR PARCEL NUMBER
- V.N.A.E. VEHICULAR NON-ACCESS EASEMENT
- S.C.E. SCENIC CORRIDOR EASEMENT
- D.E. DRAINAGE EASEMENT
- W.E. WATER EASEMENT

LEGAL DESCRIPTION

PARCEL NO. 1
LOT 2, MINOR LAND DIVISION OF CROWN WEST PLAT, A DIVISION LAND MAP RECORDED IN BOOK 1259 OF MAPS, 28, RECORDS OF MARICOPA COUNTY, ARIZONA.

PARCEL NO. 2
EASEMENTS FOR ACCESS AND PARKING AS SET FORTH IN DECLARATION OF ESTABLISHMENT OF RESTRICTIONS AND GRANTS OF EASEMENTS RECORDED AS 89-265868 OF OFFICIAL RECORDS; SECOND AMENDMENT TO DECLARATION OF ESTABLISHMENT OF RESTRICTIONS AND GRANTS OF EASEMENTS RECORDED AS 2016-0100026 OF OFFICIAL RECORDS; AND AMENDED AND RESTATED DECLARATION OF CROSS EASEMENTS AND PARKING RECORDED AS 2007-251301 OF OFFICIAL RECORDS; AND FIRST AMENDMENT TO AMENDED AND RESTATED DECLARATION OF CROSS EASEMENTS AND PARKING RECORDED AS 2016-0100025 OF OFFICIAL RECORDS.

EASEMENTS CORRESPONDING TO SCHEDULE "B" ITEMS

SURVEYORS NOTES SHOWN IN ITALICS.

(3) ALL MATTERS AS SET FORTH IN LICENSE AGREEMENT, RECORDED OCTOBER 07, 1988 AS 88-499000 OF OFFICIAL RECORDS.

AN AGREEMENT FOR USE OF A TEMPORARY SERVICE DRIVE FOR FIRE AND EMERGENCY ACCESS

(4) AN EASEMENT FOR UNDERGROUND UTILITY AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED AS 89-081989 OF OFFICIAL RECORDS.

AS SHOWN HEREON, 12 FOOT WIDE PUBLIC UTILITY EASEMENT TO THE CITY OF SCOTTSDALE

(5) AN EASEMENT FOR ELECTRIC LINES AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED AS 89-167790 OF OFFICIAL RECORDS.

AS SHOWN HEREON, 8 FOOT WIDE TO ARIZONA PUBLIC SERVICE

6. ALL MATTERS AS SET FORTH IN DECLARATION OF ESTABLISHMENT OF RESTRICTIONS AND GRANT OF EASEMENTS, RECORDED JUNE 09, 1989 AS 89-265868 OF OFFICIAL RECORDS AND ASSIGNMENT OF DECLARANT'S RIGHTS RECORDED JUNE 16, 1998 AS 98-512367 AND FIRST AMENDMENT RECORDED AUGUST 5, 2014 AS 2014-0513831 OF OFFICIAL RECORDS AND SECOND AMENDMENT RECORDED FEBRUARY 17, 2016 AS 2016-0100026 OF OFFICIAL RECORDS.

NO PLOTTABLE EASEMENTS; LOCATED OVER THE COMMON AREAS FOR VEHICULAR & PEDESTRIAN INGRESS, EGRESS & VEHICULAR PARKING ALONG WITH EASEMENT FOR INSTALLATION, MAINTENANCE OF DRAINAGE SYSTEMS, WATER MAINS, SEWER, WATER SPRINKLER LINES, TELEPHONE, ELECTRICAL CONDUIT, GAS MAINS AND OTHER PUBLIC UTILITIES.

(7) AN EASEMENT FOR UNDERGROUND UTILITY AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED AS 90-405561 OF OFFICIAL RECORDS.

AS SHOWN HEREON, 12 FOOT WIDE WATERLINE EASEMENT

8. THE TERMS AND PROVISIONS CONTAINED IN THE DOCUMENT ENTITLED "SPECIAL MAINTENANCE AGREEMENT" RECORDED OCTOBER 19, 1990 AS 90-470951 OF OFFICIAL RECORDS.

NO PLOTTABLE EASEMENTS; AN AGREEMENT WITH CITY OF SCOTTSDALE TO CONSTRUCT RETAINING WALLS OVER WATERLINE EASEMENTS RECORDED IN DOCUMENTS 1989-081989 & 1990-405561

(9) RESTRICTIONS, DEDICATIONS, CONDITIONS, RESERVATIONS, EASEMENTS AND OTHER MATTERS SHOWN ON THE PLAT OF CROWN WEST LAND DIVISION, AS RECORDED IN PLAT BOOK 857 OF MAPS, PAGE(S) 19 AND THEREAFTER PARTIAL RELEASE OF EASEMENT RECORDED OCTOBER 15, 2015 AS 2015-0742170 OF OFFICIAL RECORDS, BUT DELETING ANY COVENANT, CONDITION OR RESTRICTION INDICATING A PREFERENCE, LIMITATION OR DISCRIMINATION BASED ON RACE, COLOR, RELIGION, SEX, HANDICAP, FAMILIAL STATUS OR NATIONAL ORIGIN TO THE EXTENT SUCH COVENANTS, CONDITIONS OR RESTRICTIONS VIOLATE 42 USC 3604(C).

AS SHOWN HEREON.

10. ALL MATTERS AS SET FORTH IN AMENDED AND RESTATED DECLARATION OF CROSS EASEMENTS AND PARKING, RECORDED MARCH 01, 2007 AS 2007-251301 OF OFFICIAL RECORDS AND FIRST AMENDMENT RECORD FEBRUARY 17, 2016 AS 2016-0100025 OF OFFICIAL RECORDS.

NO PLOTTABLE EASEMENTS;

(11) AN EASEMENT FOR WATERLINE AND INCIDENTAL PURPOSES IN THE DOCUMENT RECORDED OCTOBER 15, 2015 AS 2015-0743392 OF OFFICIAL RECORDS.

AS SHOWN HEREON;

12. RESTRICTIONS, DEDICATIONS, CONDITIONS, RESERVATIONS, EASEMENTS AND OTHER MATTERS SHOWN ON THE PLAT OF MINOR LAND DIVISION OF CROWN WEST PLAT, AS RECORDED IN PLAT BOOK 1259, PAGE(S) 28, BUT DELETING ANY COVENANT, CONDITION OR RESTRICTION INDICATING A PREFERENCE, LIMITATION OR DISCRIMINATION BASED ON RACE, COLOR, RELIGION, SEX, HANDICAP, FAMILIAL STATUS OR NATIONAL ORIGIN TO THE EXTENT SUCH COVENANTS, CONDITIONS OR RESTRICTIONS VIOLATE 42 USC 3604(C).

NO NEW EASEMENTS ACROSS THE SUBJECT PROPERTY WERE CREATED BY THIS PLAT

SITE ADDRESS

23733 NORTH SCOTTSDALE ROAD, SCOTTSDALE ARIZONA 85255

SITE AREA

AREA: GROSS/NET = 195,959 SQ.FT. OR 4.4984 ACRES MORE OR LESS

ASSESSORS PARCEL NUMBER

A.P.N. 212-05-182B AND PART OF 212-05-182C

BASIS OF BEARING

THE WEST LINE OF THE S.W. QUARTER OF SECTION 11, TOWNSHIP 4 NORTH, RANGE 4 EAST OF GILA & SALT RIVER BASE & MERIDIAN; THE SAID LINE BEARS N 00°01'07" W, AS SHOWN ON FINAL PLAT OF CROWN WEST LAND DIVISION, RECORDED IN BOOK 857, PAGE 19, M.C.R.

FEMA FLOOD ZONE

THE SUBJECT SITE IS LOCATED IN FLOOD ZONE "AO", BEING DESCRIBED AS "FLOOD DEPTH OF 1 TO 3 FEET (USUALLY SHEET FLOW ON SLOPING TERRAIN), AVERAGE DEPTHS DETERMINED. FOR AREAS OF ALLUVIAL FAN FLOODING, VELOCITIES ALSO DETERMINED AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP NO. 04013C1310L, WITH A REVISED DATE OF OCTOBER 16, 2013.

ZONING

THE SUBJECT SITE IS CURRENTLY ZONED (C-2 ESL) CENTRAL BUSINESS WITH ENVIRONMENTAL SENSITIVE LAND OVERLAY PER THE CITY OF SCOTTSDALE.

UTILITY NOTE

UTILITIES LOCATIONS SHOWN HEREON ARE BASED ON VISIBLE FIELD OBSERVATIONS ONLY.

CERTIFICATION

TO: CITY OF SCOTTSDALE, GENERATIONS AT PINNACLE, LLC, A MICHIGAN LIMITED LIABILITY COMPANY and FIRST AMERICAN TITLE INSURANCE COMPANY

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE "2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS," JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 8, 11, 13, 16, 17 AND 19 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON APRIL 18, 2016.

DATE OF PLAT OR MAP: 6-27-2016

NAME: GARY E. STOCKER R.L.S. #17516

SHEET INDEX

OWNER

GENERATIONS AT PINNACLE PEAK LLC
1600 SOUTH BEACON BLVD. SUITE 260
GRAND HAVEN, MI 49417

SURVEYOR

SITE CONSULTANTS, INC.
113 SOUTH ROCKFORD DRIVE
TEMPE, ARIZONA 85281
TELE: 480-894-2820
CONTACT: GARY STOCKER, R.L.S.

TITLE NOTE

THE RECORD DOCUMENTS NOTED ON THIS PLAT OF SURVEY ARE THOSE DOCUMENTS, AND ONLY THOSE DOCUMENTS, DETERMINED BY FIRST AMERICAN TITLE INSURANCE COMPANY AND SET FORTH IN ORDER NO. NCS-798669-PHX1, WITH AN EFFECTIVE DATE OF JUNE 20, 2016, AS AFFECTING THE PROPERTY DEPICTED ON THIS LAND TITLE SURVEY. BY NOTING SAID DOCUMENTS ON THIS PLAT OF SURVEY, THE UNDERSIGNED SURVEYOR MAKES NO REPRESENTATION AS TO THE EXISTENCE OF ANY OTHER RECORD DOCUMENTS THAT MAY AFFECT THE SURVEYED PROPERTY. ALL DIMENSIONS SHOWN HEREON ARE FROM THE PROPERTY DESCRIPTION INCLUDED IN SAID TITLE COMMITMENT, UNLESS OTHERWISE NOTED.

ITEMS 16 & 17, TABLE "A":

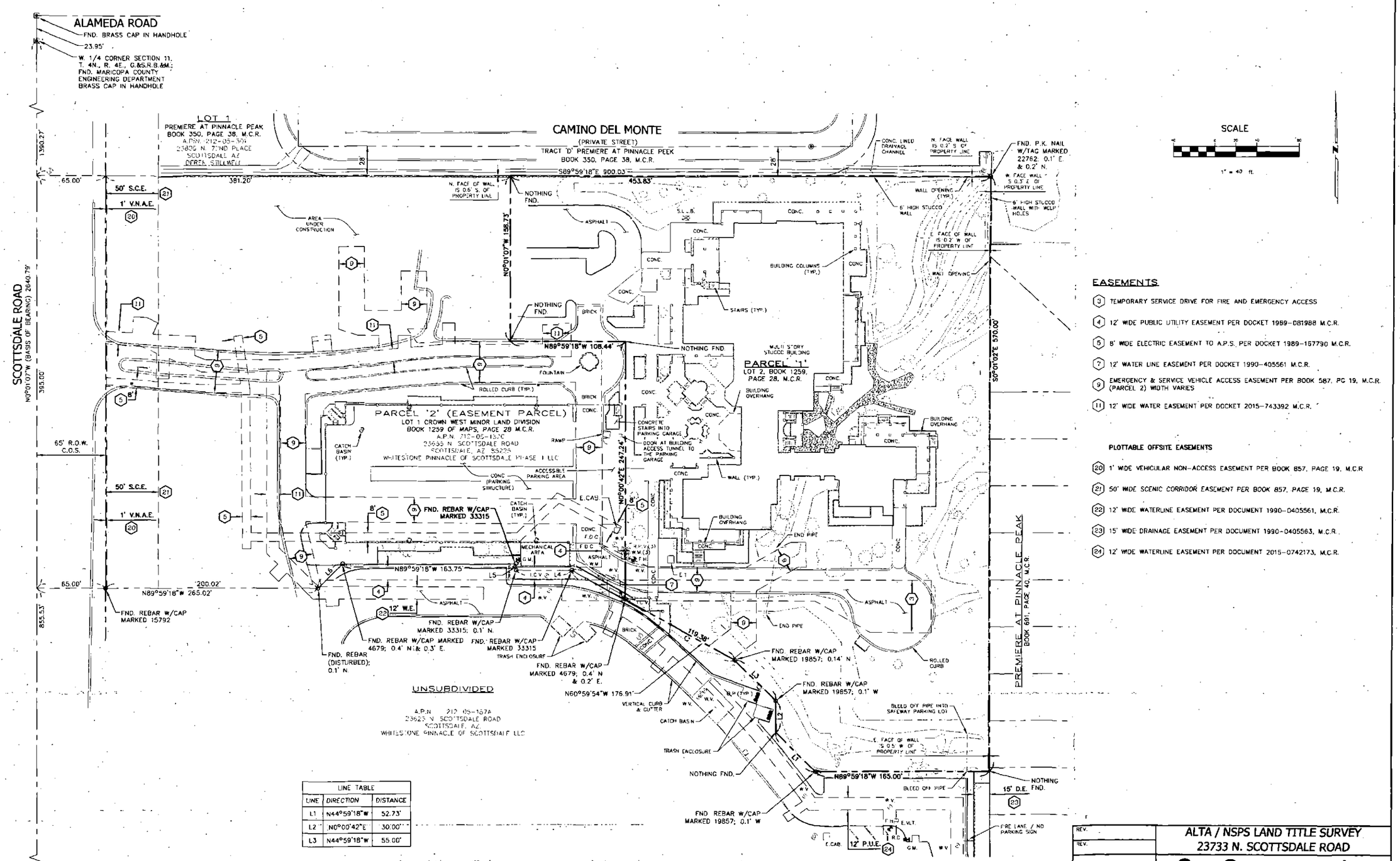
16. AT THE TIME OF THIS SURVEY THERE IS NO OBSERVABLE EVIDENCE OF EARTH MOVING WORK AND BUILDING CONSTRUCTION ON THE SUBJECT PARCEL 1. HOWEVER BUILDING CONSTRUCTION IS IN PROGRESS ON THE ADJACENT PARCEL, LOT 1 OF MINOR LAND DIVISION OF CROWN WEST PLAT, A LAND DIVISION MAP RECORDED IN BOOK 1259 OF MAPS, 28, RECORDS OF MARICOPA COUNTY, ARIZONA.

17. AT THE TIME OF THIS SURVEY THERE IS NO DOCUMENTATION OF PROPOSED CHANGES IN RIGHTS OF WAY. THE SUBJECT PARCEL IS LAND LOCKED AND DOES NOT ABUT ANY JURISDICTIONAL RIGHTS-OF-WAY. ACCESS IS PROVIDED BY DOCUMENT 2007-251301. THE ABUTTING PARCEL TO THE WEST IS CURRENTLY UNDER CONSTRUCTION WHICH AT THE TIME TIME OF THIS SURVEY DOES SHOW EVIDENCE OF SIDEWALK AND DRIVEWAY RECONSTRUCTION UPON ITS PARCEL.

REV:	ALTA / NSPS LAND TITLE SURVEY 23733 N. SCOTTSDALE ROAD
REV	**Site Consultants, Inc.** ENGINEERS · SURVEYORS · CONSULTANTS 113 SOUTH ROCKFORD DR., TEMPE, ARIZONA 85281 TEL (480) 894-2820 FAX (480) 894-2847

REGISTERED LAND SURVEYOR — CERTIFICATE NO. 17516 — GARY E. STOCKER — SIGNED — ARIZONA, U.S.A. — EXPIRES 6-30-2016

PROJECT: 2098	CHECKED BY: GES	DRAWN BY: MCO
DWG: 2098-V-ALTA	SCALE: 1" = N/A HORIZONTAL	1 OF 2
DATE: 6-27-2016		



LINE TABLE		
LINE	DIRECTION	DISTANCE
L1	N44°59'18"W	52.73'
L2	N0°00'42"E	30.00'
L3	N44°59'18"W	55.00'

EASEMENTS

(3) TEMPORARY SERVICE DRIVE FOR FIRE AND EMERGENCY ACCESS

(4) 12' WIDE PUBLIC UTILITY EASEMENT PER DOCKET 1989-081988 M.C.R.

(5) 8' WIDE ELECTRIC EASEMENT TO A.P.S. PER DOCKET 1989-157790 M.C.R.

(7) 12' WATER LINE EASEMENT PER DOCKET 1990-405561 M.C.R.

(9) EMERGENCY & SERVICE VEHICLE ACCESS EASEMENT PER BOOK 587, PG 19, M.C.R. (PARCEL 2) WIDTH VARIES

(11) 12' WIDE WATER EASEMENT PER DOCKET 2015-743392 M.C.R.

PLOTTABLE OFFSITE EASEMENTS

(20) 1' WIDE VEHICULAR NON-ACCESS EASEMENT PER BOOK 857, PAGE 19, M.C.R

(21) 50' WIDE SCENIC CORRIDOR EASEMENT PER BOOK 857, PAGE 19, M.C.R.

(22) 12' WIDE WATERLINE EASEMENT PER DOCUMENT 1990-0405561, M.C.R.

(23) 15' WIDE DRAINAGE EASEMENT PER DOCUMENT 1990-0405563, M.C.R.

(24) 12' WIDE WATERLINE EASEMENT PER DOCUMENT 2015-0742173, M.C.R.

REV:
REV:

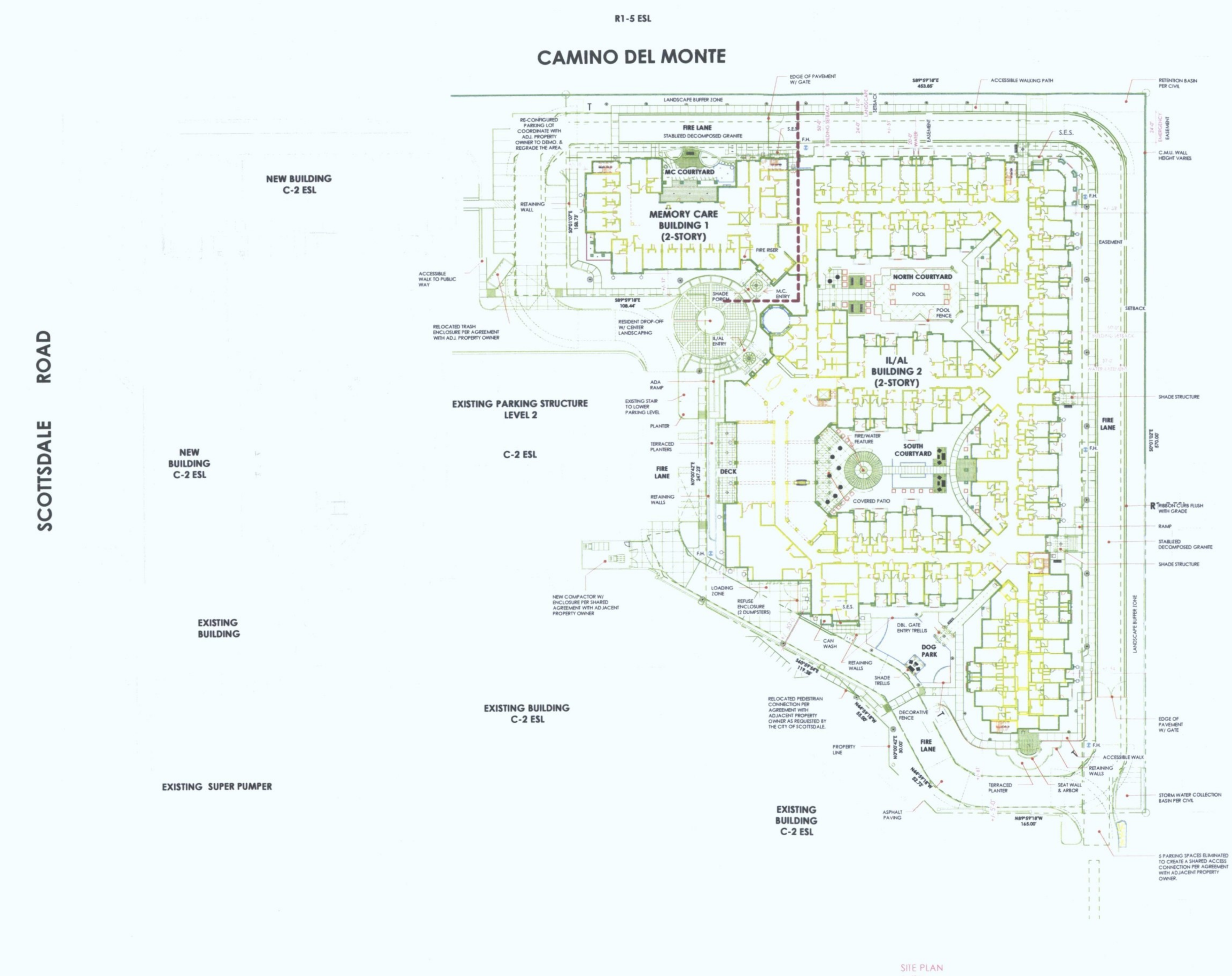
ALTA / NSPS LAND TITLE SURVEY
23733 N. SCOTTSDALE ROAD

Site Consultants, Inc.
ENGINEERS · SURVEYORS · CONSULTANTS
113 SOUTH ROCKFORD DR., TEMPE, ARIZONA 85281
TEL (480) 894-2820 FAX (480) 894-2847

REGISTERED LAND SURVEYOR — CERTIFICATE NO. 17516 — CARY C. STOCKER — ARIZONA U.S.A. — EXPIRES 6-30-2016

PROJECT 2098	CHECKED BY: GLS	DRAWN BY: MGO	2 OF 2
DWG. 2098-V-A.1A	SCALE: 1" = 40' HORIZONTAL		
DATE: 6-27-2016			

Attachment No. 3



PROJECT DATA:

PROJECT NAME & ADDRESS:
Senior Living at Scottsdale Road and Pinnacle Peak Road
23733 North Scottsdale Road
Scottsdale, Arizona 85255

PROJECT DESCRIPTION:
Senior Living at Scottsdale Road and Pinnacle Peak Road is a senior living community to be located on a site at the northeast corner of Scottsdale Road and Pinnacle Peak Road.
The project will offer 2 levels of assisted living per the Arizona Department of Health Services: personal care and directed care. The service levels will comply with the assisted living definitions as required by the state.

GENERAL ZONING ANALYSIS:

Zoning:
Existing....................C-2 (ESL Exempt)
Provided....................C-2 (ESL Exempt)

Site Area:
Net Acres....................+/- 4.49 Acres (195,956 S.F.)
Gross Acres....................+/- 4.49 Acres (195,956 S.F.)

Density:
Provided (Overall)....................24.5 D.U./Acre (90+20 D.U./4.49 Acres)

Building Height:
Allowed....................36'-0" Above Finished Floor
Provided....................36'-0" Max. (Top of Tower)

Setbacks:	Required	Provided
Front (West)	None	10'-0" Min.
Side (South)	None	25'-0" Min.
Side (North)	50'-0"	50'-0"
Rear (East)	50'-0"	50'-0"

GENERAL BUILDING CODE ANALYSIS:

Jurisdiction & Associated Codes and Regulations:
- 2012 International Building Code w/Scottsdale Amendments
- 2012 International Mechanical Code w/ Scottsdale Amendments
- 2012 International Plumbing Code w/ Scottsdale Amendments
- 2011 National Electrical Code / NFPA-70 w/ Scottsdale Amendments
- 2012 International Fire Code w/ Scottsdale Amendments
- 2012 International Energy Conserv Code w/ Scottsdale Amendments
- 2012 International Fuel Gas Code w/ Scottsdale Amendments
- Accessibility Standards - ICC A117.1 - 2009
- Fair Housing Act & ADAAG
- 2010 ADA Standards for Accessible Design

Occupancy Type:
Building 1....................I-2
Building 2 (Residences)....................I-1
Building 2: (Dining & Amenity Spaces)....................A-2
Building 2: (Office)....................B

Construction Type:
Building 1....................II-A (NFPA 13)
Building 2....................V-A (NFPA13)

OFF-STREET PARKING ANALYSIS:

Parking Standards:
Parking Stall....................9'-0" x 18'-0"
Parking Aisle (Firelane)....................24'-0"

Required Parking:
Memory Care parking....................(0.7 x 20) = 14 P.S.
Assisted/Independent parking....................(1.25 x 90) = 113 P.S.
Total requirec **= 127 P.S.**

Note: All parking spaces are off-site as specified in the shared agreement with the neighboring property to the west.

Provided Parking:
Standard Parking Spaces....................121 P.S.
Accessible Spaces:....................5 P.S.
Van Spaces (1 per 8 min.)....................1 P.S.
Total Provided **127 P.S.**

UNIT MIX:
**All Unit Types are Personal Care unless noted "A.L.D.C." (Assisted Living Directed Care)

Unit Type:		Gross Area	# of Unit	% of Unit	# of Beds
Unit B	(1 Bedroom)	709 S.F.	38	34.5%	38
Unit B2	(1 Bedroom)	854 S.F.	6	5.4%	6
Unit C	(1 Bedroom)	782 S.F.	2	1.8%	2
Unit D	(1 Bed/Den)	689 S.F.	8	7.2%	8
Unit D2	(1 Bed/Den)	882 S.F.	12	10.9%	12
Unit E	(1 Bed/Den)	886 S.F.	2	1.8%	2
Unit F	(2 Bedroom)	1,026 S.F.	14	12.7%	28
Unit F2	(2 Bedroom)	1,240 S.F.	8	7.2%	16
Unit G	(Studio/A.L.D.C.**)	405 S.F.	4	3.6%	4
Unit I	(1 Bed/A.L.D.C.**)	612 S.F.	16	14.5%	16
Total:			110		132

Accessible Units:*

I-1
Required: 90 units x 0.04 = 4 units
Provided: 4 Accessible units & 86 Type B Units

I-2
Required: 20 units x 0.50 = 10 Accesible units
Provided: 20 Accessible units

*Accessible units to comply with 2012 IBC Section 1107.5

BUILDING AREAS:
Note: Project Area calculations include covered patios and balconies

Building 1
First Floor:....................12,591 SF
Second Floor:....................11,602 SF
Total for Building 1 (Two Floors): **24,193 SF**

Building 2A
First Floor:....................20,144 SF
Second Floor:....................19,848 SF
Total for Building 2, (Two Floors): **39,992 SF**

Building 2B
First Floor:....................32,144 SF
Second Floor:....................31,251 SF
Total for Building 2B (Two Floors): **63,395 SF**

Building 2C
First Floor:....................23,532 SF
Second Floor:....................16,281 SF
Total for Buidling 2C (Two Floors): **39,813 SF**

Building 2 - 2A, 2B & 2C
First Floor:....................75,820 SF
Second Floor:....................67,380 SF
Total Building 2 - 2A, 2B & 2C: 143,200 SF

Total Overall Structure: 167,393 SF

SITE AREAS:

Lot Coverage
Net Lot Area:....................4.49 Net Acres (195,955 SF)
Total All Building Footprints 88,411 SF
Lot Coverage Provided : 45.12%

Open Space Calculations:
Net Lot Area:....................4.49 Net Acres (195,955 SF)
Required Open Space (24% of Lot Area) +/-1.08 Acres (47,029 SF)
Provided Open Space (41.9% of Lot Area) +/-1.93 Acres (84,493 SF)

PROJECT

NO. 14-7016-02

SL @ NEC OF SCOTTSDALE & PINNACLE PEAK

Scottsdale, AZ

CLIENT

Investment Property Associates, LLC (IPA)
1600 S Beacon Blvd. Suite 260
Grand Haven, Michigan 49417
(616) 846-6900 P
(616) 846-9251 f

SEAL

SCHEMATIC NOT FOR CONSTRUCTION OR RECORDING

CONTACT

TODD & ASSOCIATES, INC.
Architecture Planning
Landscape Architecture
4019 North 44th Street
Phoenix, AZ 85018
602-952-8280p 602-952-8995f
www.toddassoc.com

DATA

09-12-16
Design Review Board
50% Design Development

Proj Mgr.
Dwn By: Author

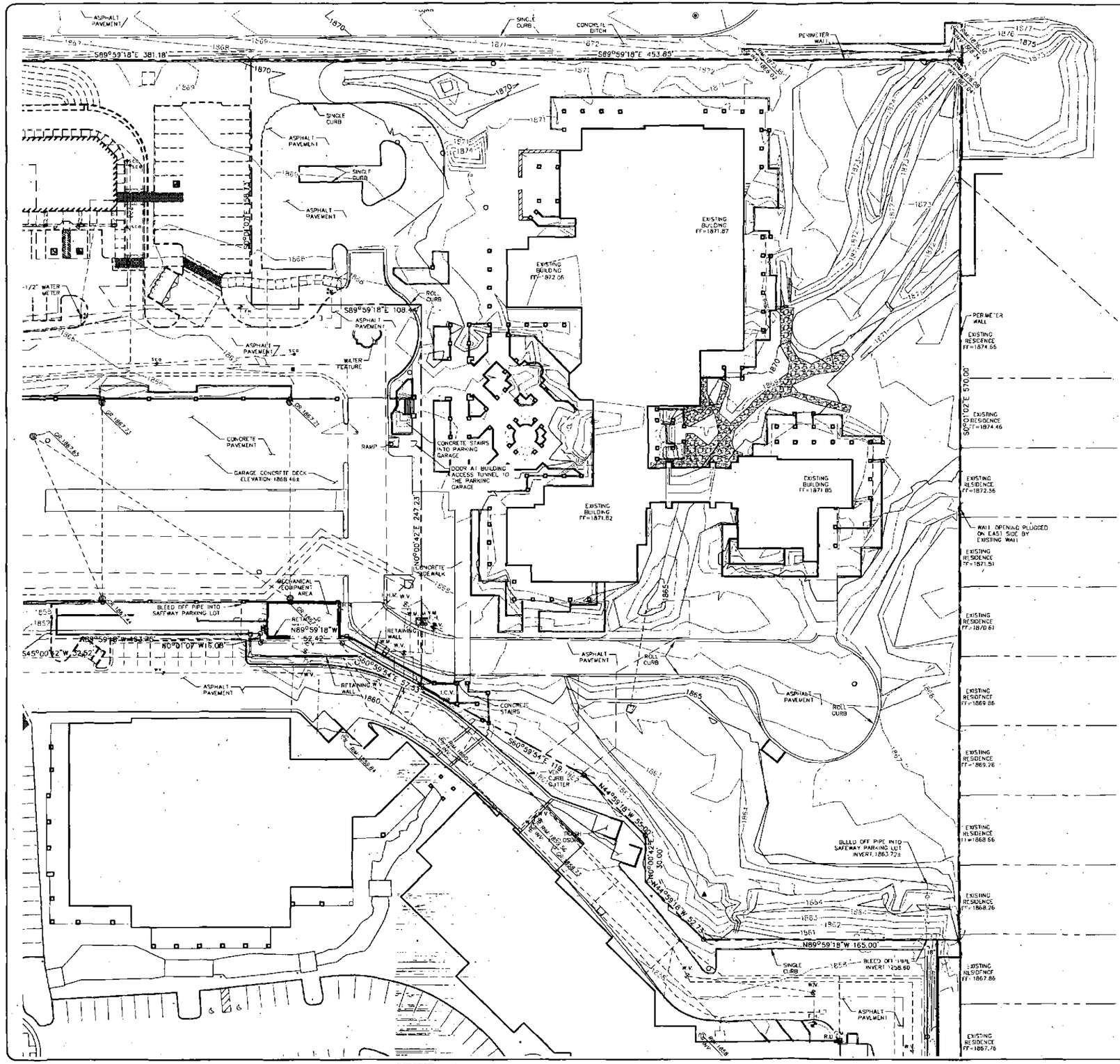
Rev. Date: Description:

"PROMPT PAYMENT NOTICE"
Choose Appropriate Option from the Titleblock properties. There are 5 options, make the option you want visible and make sure the rest are unchecked. Also clear check box for instructions.

SITE PLAN

A1.0

Attachment No. 4



SITE ADDRESS

23733 NORTH SCOTTSDALE ROAD, SCOTTSDALE ARIZONA 85255

SITE AREA

AREA = 195,959 SQ.FT. OR 4.4986 ACRES MORE OR LESS

ASSESSORS PARCEL NUMBER

A.P.N. 212-05-182B AND PART OF 212-05-182C

BASIS OF BEARING

THE WEST LINE OF THE S.W. QUARTER OF SECTION 11, TOWNSHIP 4 NORTH, RANGE 4 EAST OF GILA & SALT RIVER BASE & MERIDIAN; THE SAID LINE BEARS N 00°01'07" W, AS SHOWN ON FINAL PLAT OF CROWN WEST LAND DIVISION, RECORDED IN BOOK 857, PAGE 19, M.C.R.

FEMA FLOOD ZONE

THE SUBJECT SITE IS LOCATED IN FLOOD ZONE "AO", BEING DESCRIBED AS "FLOOD DEPTH OF 1 TO 3 FEET (USUALLY SHEET FLOW ON SLOPING TERRAIN), AVERAGE DEPTHS DETERMINED. FOR AREAS OF ALLUVIAL FAN FLOODING, VELOCITIES ALSO DETERMINED AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP NO. 04013C1310L, WITH A REVISED DATE OF OCTOBER 16, 2013.

ZONING

THE SUBJECT SITE IS CURRENTLY ZONED (C-2 ESL) CENTRAL BUSINESS WITH ENVIRONMENTAL SENSITIVE LAND OVERLAY PER THE CITY OF SCOTTSDALE.

LEGEND

	PROPERTY LINE	C.O.S.	CITY OF SCOTTSDALE
	RIGHT OF WAY LINE	R.O.W.	RIGHT OF WAY
	CENTER LINE	M.C.R.	MARICOPA COUNTY RECORDER OFFICE
	EASEMENT LINE	TC	TOP CURB ELEVATION
1180	CONTOUR LINE	G	GUTTER ELEVATION
12"-DIP W	UNDERGROUND UTILITY	P	PAVEMENT ELEVATION
	EDGE OF PAVEMENT	C	CONCRETE ELEVATION
E	UNDERGROUND ELECTRIC	NG	NATURAL GROUND
E CAB	ELECTRIC CABINET	INV	INVERT
E J-B	ELECTRIC J-BOX		
E T	ELECTRIC TRANSFORMER		
E VLT	ELECTRIC VUALT		
OHE	OVERHEAD ELECTRIC		
S	UNDERGROUND SEWER		
S	SEWER MANHOLE		
D	UNDERGROUND STORM DRAIN		
R.D.	ROOF DRAIN		
T	UNDERGROUND TELEPHONE		
W	UNDERGROUND WATER		
W.V.	WATER VALVE		
F.H.	FIRE HYDRANT		

REV.
REV.
REV.
REV.
REV.

Site Consultants, Inc.
ENGINEERS - SURVEYORS - CONSULTANTS
113 SOUTH ROCKFORD DRIVE, TEMPE, ARIZONA 85281
TEL: (480) 894-2820, FAX: (480) 894-2847

TOPOGRAPHIC SURVEY

SENIOR LIVING
23733 N. SCOTTSDALE ROAD
SCOTTSDALE, ARIZONA

PROJECT NO:	2098
SCALE:	1" = 30'
DRAWN BY:	MJC
CHECKED BY:	MJC
DATE:	6-17-2016
DWG:	2098-C-BASE-TOPO

1 OF 1

Attachment No. 5

GIANT INDUSTRIES, INC.

CORPORATE HEADQUARTERS

IMPROVEMENT PLANS

[illegible]

REVISED APRIL 1982

[illegible]

LEGAL DESCRIPTIONS

PARCEL 1

That portion of the Southwest one-quarter (SW 1/4) of Section 11, Township 4 North, Range 4 East, of the Gila and Salt River Base and Meridian, in Maricopa County, Arizona being more particularly described as follows:

Commencing at the Southwest corner of said Section 11;
thence North 00° 01' 07" West, along the West line of said Section 11, a distance of 663.33 feet to THE TRUE POINT OF BEGINNING;
thence continuing North 00° 01' 07" West, along said Section line, 307.19 feet;
thence South 89° 59' 18" East, 900.03 feet;
thence South 00° 01' 07" East, 307.19 feet;
thence North 89° 59' 18" West, 900.03 feet to THE TRUE POINT OF BEGINNING.

PARCEL 2

That portion of the Southwest one-quarter (SW 1/4) of Section 11, Township 4 North, Range 4 East, of the Gila and Salt River Base and Meridian, in Maricopa County, Arizona being more particularly described as follows:

Commencing at the Southwest corner of said Section 11;
thence North 00° 01' 07" West, along the West line of said Section 11, a distance of 756.53 feet to THE TRUE POINT OF BEGINNING;
thence continuing North 00° 01' 07" West, along said Section line, 96.00 feet;
thence South 89° 59' 18" East, 900.03 feet;
thence South 00° 01' 07" East, 96.00 feet;
thence North 89° 59' 18" West, 900.03 feet to THE TRUE POINT OF BEGINNING.

PARCEL 3

That portion of the Southwest one-quarter (SW 1/4) of Section 11, Township 4 North, Range 4 East, of the Gila and Salt River Base and Meridian, in Maricopa County, Arizona [illegible]

[illegible] line of said Section 11 [illegible] feet to the South line [illegible] South Section line, [illegible] feet to THE TRUE POINT OF BEGINNING.

QUANTITIES

PAVING

4 1/2" AC/5 1/2" ASPHALT BASE (OPEN GRADED)	2,060 S.Y.
5" AC/5 1/2" ASPHALT BASE (OPEN GRADED)	1,940 S.Y.
DECORATIVE CONCRETE PAVERS	3,632 S.Y.
ROLL CURB	10,780 S.Y.

WATER

6" PVC PIPE	873 L.F.
6" VALVE BBC	1 EA.
6" FIRE HYDRANT COMPLETE	2 EA.
2" SERVICE & METER	2 EA.
2" CORP. STOP	1 EA.

SEWER (PRIVATE)

8" PVC PIPE	490 L.F.
6" PVC PIPE	191 L.F.
4" PVC PIPE	170 L.F.
CLEANOUT	6 EA.

RIGHT OF WAY QUANTITIES

4" PAVEMENT / NATIVE	450 S.Y.
12" PVC PIPE (WTR)	1,228 S.Y.
12" VALVE BBC	3 EA.
2" CORP. STOP	1 EA.
8" PVC PIPE (SWR)	304 L.F.
CLEANOUT	1 EA.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE AS-BUILT MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION, OR AS NOTED, AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

SHEETS 1,4,6,7 REVISED BASIN 2

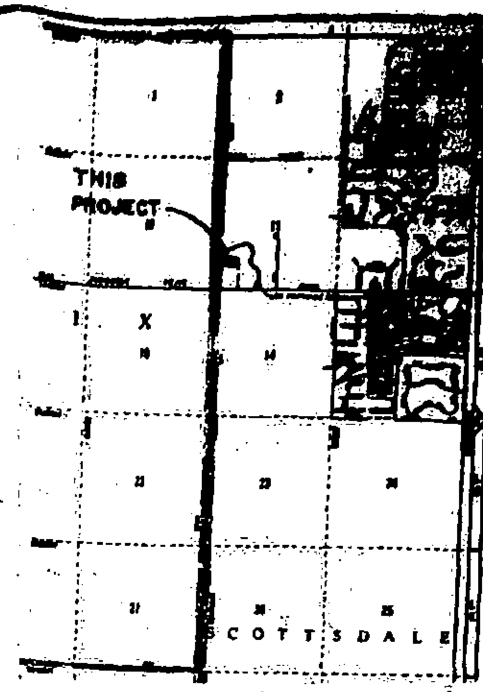
CITY OF SCOTTSDALE
RE-APPROVAL
REVIEW & RECOMMENDED APPROVAL BY:
10/14/87
DATE

APPROVALS

MARICOPA COUNTY HEALTH DEPARTMENT

BY: 7/5/88
DATE

CITY OF SCOTTSDALE



VICINITY MAP

OWNER & DEVELOPER

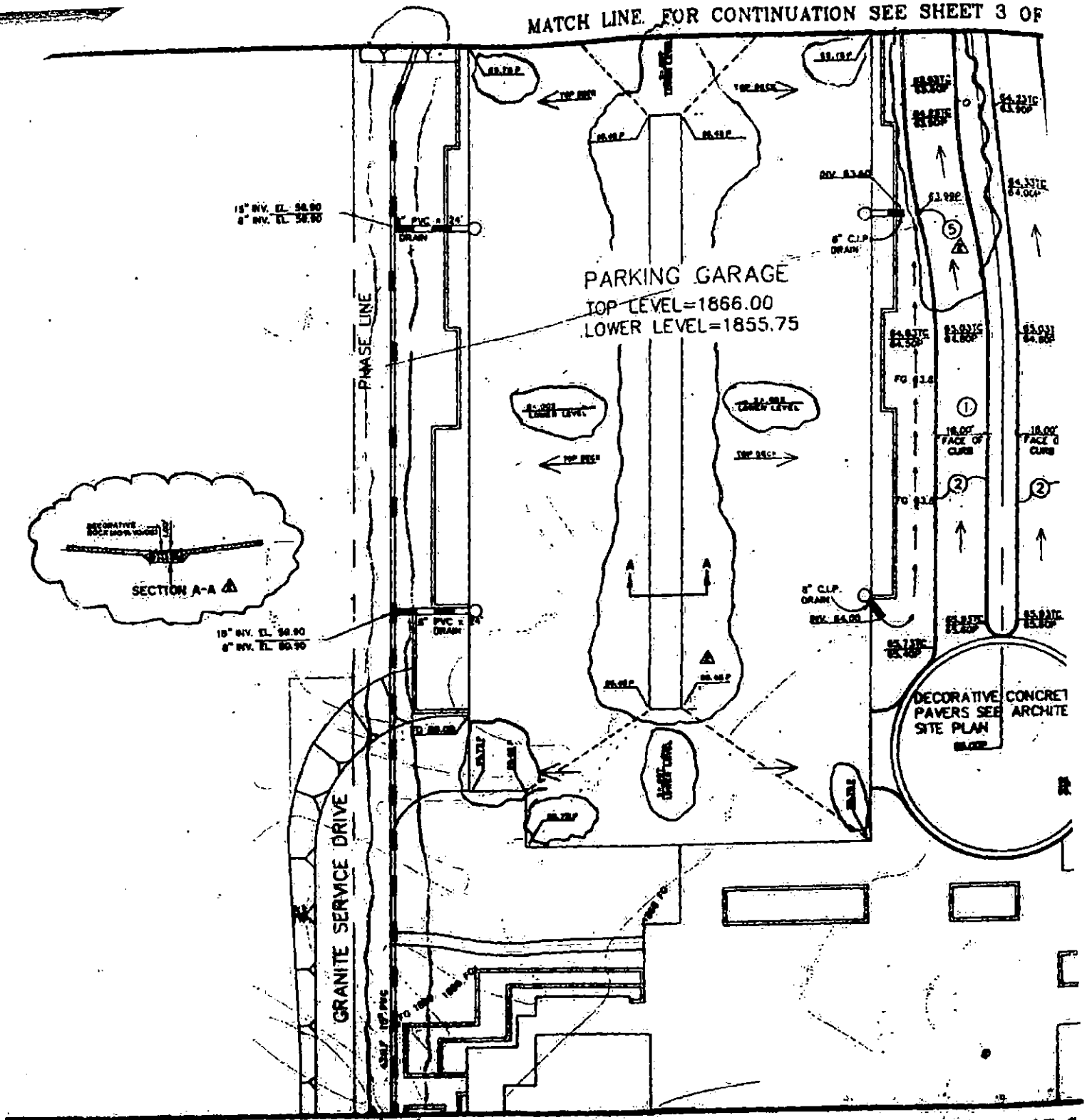
GIANT INDUSTRIES, INC.
P.O. BOX 9156
PHOENIX, ARIZONA 85068
PHONE: (602) 274-3584

ENGINEER

BROOKS, HERSEY & ASSOCIATES, INC.
ENGINEERS / SURVEYORS
5246 S. 40TH STREET
PHOENIX, ARIZONA 85040
PHONE: (602) 437-5733

BENCHMARK

BRASS CAP IN H.H. AT PINNACLE PEAK RD. & SCOTTSDALE RD. ELEV. 1836.44
(CITY OF SCOTTSDALE DATUM)


MATCH LINE. FOR CONTINUATION SEE SHEET 3 OF
PARKING GARAGE
TOP LEVEL=1866.00
LOWER LEVEL=1855.75
PHASE LINE
GRANITE SERVICE DRIVE
SECTION A-A
DECORATIVE CONCRET
PAVERS SEE ARCHITE
SITE PLAN
MATCH LINE. FOR CONTINUATION SEE SHEET 5 OF 6.

SCALE 1" = 20'

MATCH LINE. FOR CONTINUATION SEE SHEET 4 OF 8.

CONSTRUCTION NOTES

1. INSTALL 4 1/2" OPEN-GRADED ASPHALT CONCRETE OVER 5.5" OPEN-GRADED BASE COURSE, USE MIRACE @ YNWL INC. SPECIFICATION TO MAINTAIN POROSITY OF PAVEMENT.
2. CONSTRUCT ROLL TYPE CURB & GUTTER PER M.A.G. S.D. 220, TYPE "C".
3. INSTALL 3" OPEN-GRADED ASPHALT CONCRETE OVER 5.5" OF 1"-GRADED BASE COURSE, USE FORCE @ YNWL INC. SPECIFICATION DATED 4/28/88 TO MAINTAIN POROSITY OF PAVEMENT.
4. CONSTRUCT REFUSE ENCLOSURE PER CITY OF SCOTTSDALE DETAIL SHEET 4.
5. CONSTRUCT 1' CURB OPENING FOR DRAINAGE.
6. INSTALL 4" AC OVER COMPACTED NATIVE SOIL.
7. INSTALL THICKENED EDGE M.A.G. S.D. 201, TYPE "B".

FINISH FLOOR ELEVATION=1870

FINISH FLOOR ELEVATION=1870

GRANITE SERVICE DRIVE

PHASE LINE

PROPERTY LINE

S 00°01'02" E 936.52'

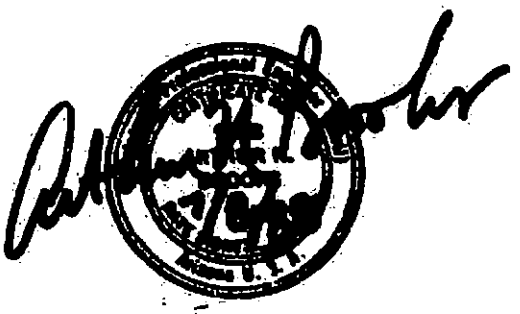
PROPERTY LINE

GIANT INDUSTRIES, INC
CORPORATE HEADQUARTERS

Attachment No. 6

139-DR-87

DRAINAGE REPORT
FOR
GIANT INDUSTRIES, INC.
CORPORATE HEADQUARTERS



BY

BROOKS, HERSEY AND ASSOCIATES, INC.
5246 SOUTH 40TH STREET
PHOENIX, ARIZONA 85040
(602) 437-3733

AUGUST 1988

REVISED
SEPTEMBER 1988

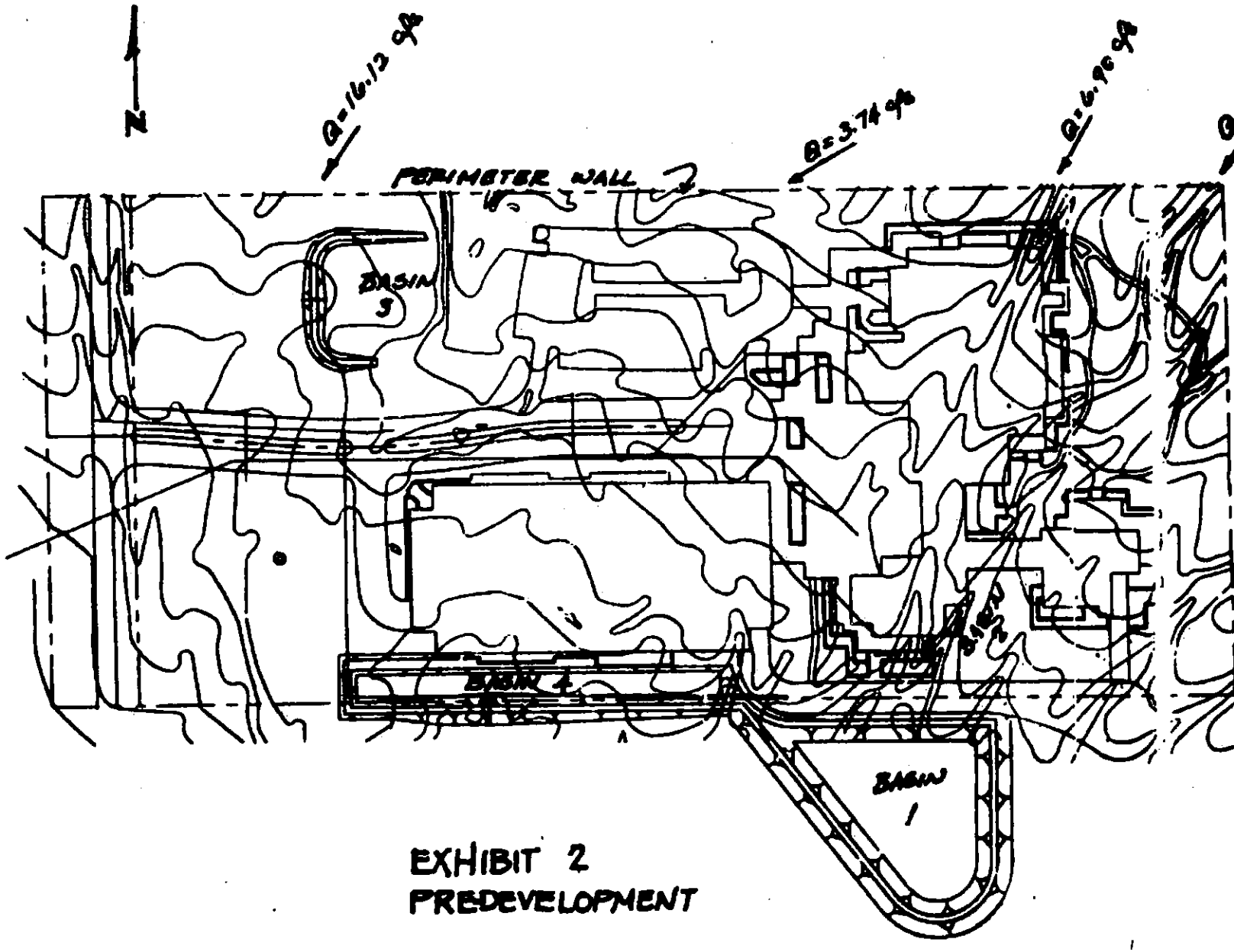


EXHIBIT 2
PREDEVELOPMENT

Attachment No. 7

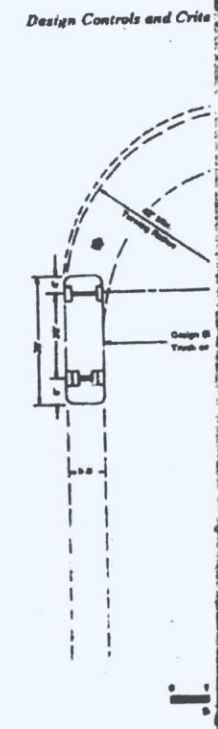


Figure II-2. Minimum

DRAINAGE REPORT

FOR

PINNACLE PEAK VILLAS

DECEMBER, 1986

REVISED

FEBRUARY 1987

PREPARED BY:

MICHAEL R. BRYCE
AMERICAN ENGINEERING COMPANY
3864 NORTH 27TH AVENUE
PHOENIX, ARIZONA 85017
PHONE: 277-3386

AMERICAN ENGINEERING COMPANY
3864 N 27th Avenue
PHOENIX, ARIZONA 85017
Phone 277-3386

JOB PINNACLE PEAK VILLAS 10
SHEET NO. ____ OF ____
CALCULATED BY DJP DATE 2-16-87
CHECKED BY ____ DATE ____
SCALE ____

RETENTION CALCULATIONS

SOUTHERN BASINS:

	SF	CN	C	CA
ROOF	112,330	98	0.91	102220
DRIVEWAY	18,850	98	0.91	17181
STREET	80,288	98	0.91	73062
LANDSCAPE				
GRASS	76389	70	0.18	13750
DESERT	76389		0.70	53472
	364 276			259,685

$C_W = \frac{259685}{364276} = 0.71$

SOIL TYPE B
20% COVER CN = 83
C = 0.42 - 0.35

$VOL_{REQ} = \frac{D}{12} A (C_d - C_u) = \frac{2.45}{12} (364276)(0.71 - 0.35)$

$VOL_{REQ} = 26,990 \text{ FT}^3$

REC AREA TRACT:

AREA = 14544 $C_W = 0.71$

$VOL_{REQ} = 14544 \left(\frac{2.45}{12}\right) (0.71 - 0.35) = 1069 \text{ FT}^3$ *

* TO BE RETAINED ON REC AREA TRACT

Attachment No. 8

GRADING AND DRAINAGE PLAN

FOR

PINNACLE PEAK VILLAS

BOOK 312, PAGE 18, M.C.R.
SCOTTSDALE, ARIZONA

GENERAL NOTES

OWNER/DEVELOPER

Southwest Savings & Loan Assoc.
3101 N. Central Ave.
Phoenix, Arizona
attn: Carrie Pollard
381-6103
MEL REESE

BENCH MARK

FOUND BRASS CAP IN HANDHOLE AT THE INTERSECTION OF PINNACLE PEAK ROAD AND SCOTTSDALE ROAD.
ELEVATION: 1858.44
CITY OF SCOTTSDALE DATUM

ESTIMATED QUANTITIES

5,750 C.Y.
488 C.Y. Cut
650 L.F. Retaining Wall

MAINTENANCE NOTE

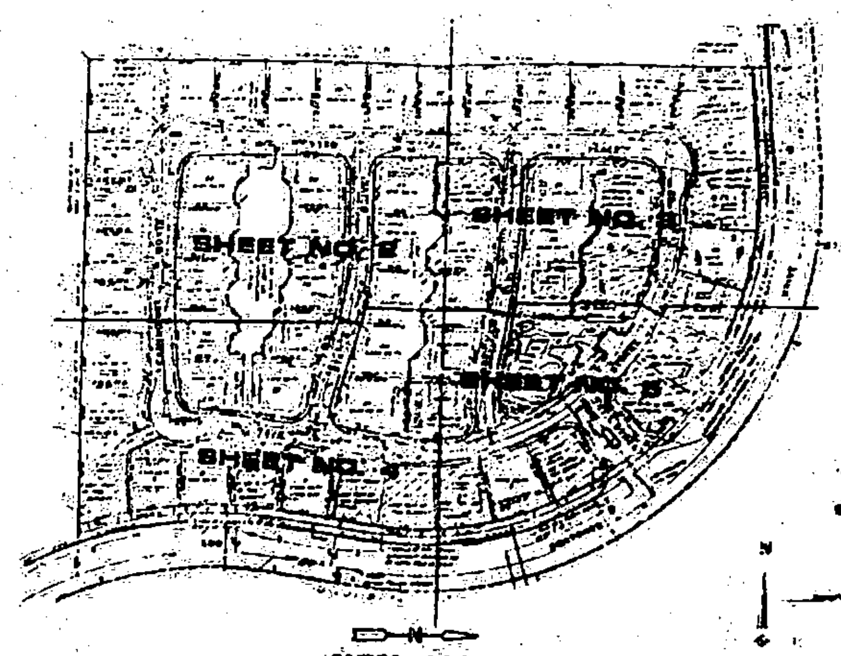
All drainage facilities, easements and landscape will be maintained by the Pinnacle Peak Villas Homeowners Association.

LEGEND

- Exist. Pavement
- Exist. Concrete
- Top of exist. curb / Exist. Gutter
- Flow Direction
- F.F. Finish Floor
- Denotes Not A Part of This Project

DRAINAGE NOTE

This plan has been prepared to conform with Drainage Patterns and construction methods indicated on the original approved Grading and Drainage Plan prepared by American Engineering dated 4/30/87 Job No. 84349.



KEY MAP

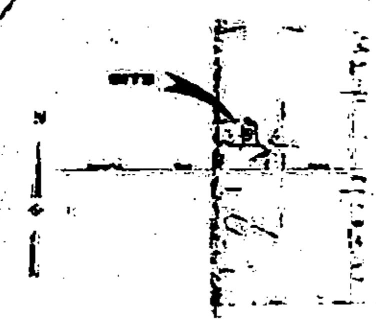
SCALE: 1"=100'

LEGAL DESCRIPTION (THIS CONSTRUCTION)

Lots 2, 6, 8, 9, 11 to 14, inclusive; 17 to 24, inclusive, 30, 37, 38, 41, 42, 43, 45 to 59, inclusive, and Tracts A to F, inclusive, PINNACLE PEAK VILLAS, according to Book 312 of Maps, page 18, Records of Maricopa County, Arizona.

NOTES TO CONTRACTOR

1. This Plan has been prepared to indicate grading requirements due to new flood regulations being imposed by the City of Scottsdale. Also to show retention basin modifications and locate new retaining wall construction.
2. The plan shows the finished grade of fill necessary to raise the finish floor elevation above new flood plain requirements.
3. Certain lots on this site are owned by individuals other than the developer shown on this sheet. These lots are to remain as is and are not part of this construction.
4. Lots 38, 46, 47, and 48 existing pad elevations meet the new flood requirements and do not require fill. Finish floor elevations should be constructed to the grades shown on this plan. Fine grading of the finished pad will be necessary for proper drainage.
5. Construction of retaining walls with proper method of backfilling is required as shown on details on sheet 6.
6. During construction, contractor is required to maintain dust control, provide barricading if required, provide street cleanup, and repair any damage to existing landscaping, walls, curb and gutter and sidewalk, water and sewer services, electric and telephone systems, cable T.V. systems and asphalt.
7. Tracts A, B, D, E & F are to remain undisturbed and will not be part of this construction.
8. Contractor is responsible to obtain soil testing of native and imported soils for compaction requirements. Earthwork is to conform to testing recommendations.
9. Contractor is to provide pad compaction certifications as part of this project. This firm will provide grade certification. All lots are to meet compaction and grade requirements before contractor is released from contract.
10. Contractor is to provide construction staking and resetting of missing property corners as part of this contract.
11. Contractor is to ma[illegible] evidence of existing utilities during construction i.e. w[illegible] and sewer tap markers, J-Box, transformers and cable T.V.



VICINITY MAP

N.T.S.

ZONING

R-3 Townhouse Residential

UTILITIES

GENERAL NOTES

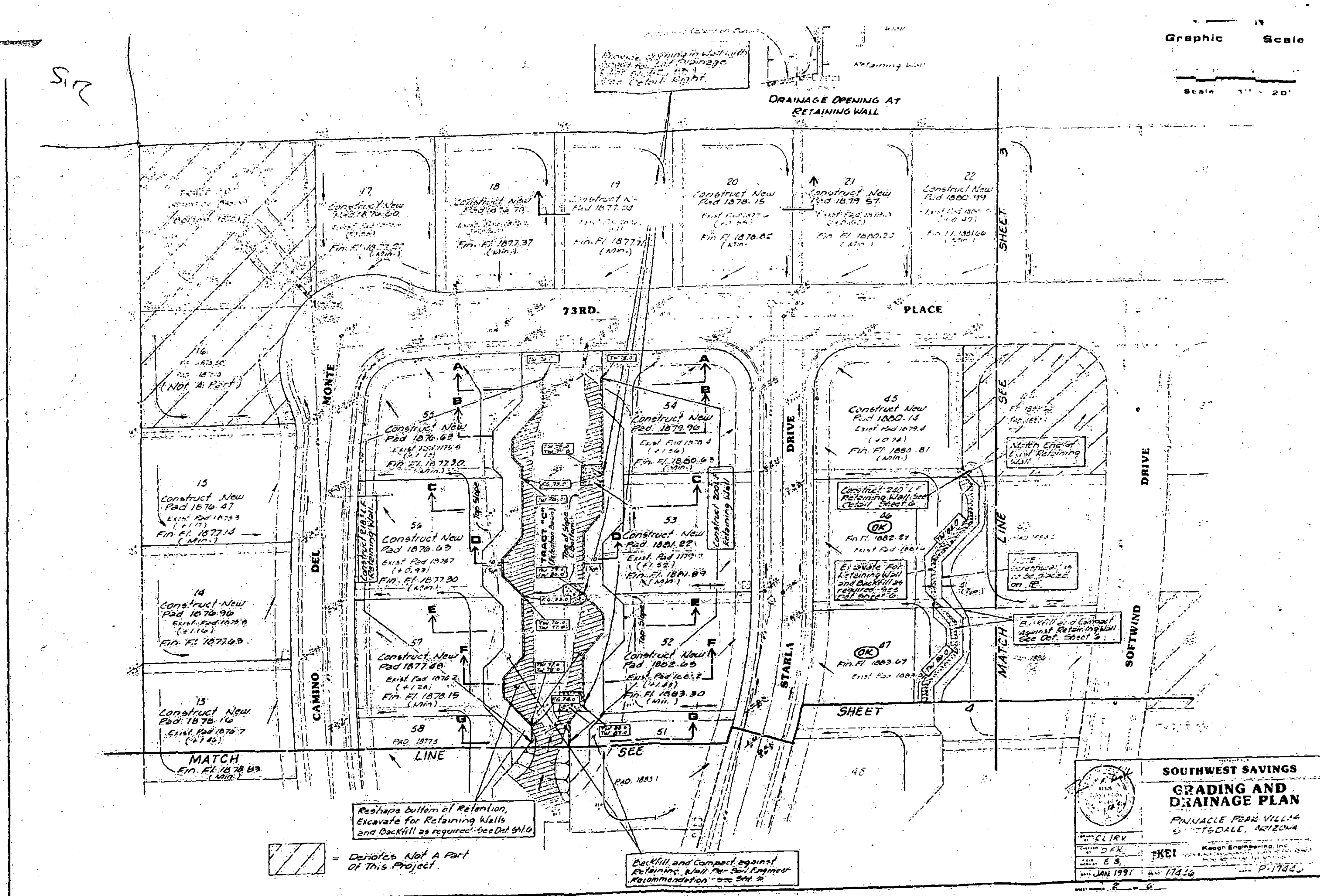
CITY OF SCOTTSDALE			
REVIEW & RECOMMENDED APPROVAL BY			
FIRE DEPT			
WATER & SEWER			
APPROVED BY		4/2/91	

SOUTHWEST SAVINGS
GRADING AND DRAINAGE PLAN
PINNACLE PEAK VILLAS
SCOTTSDALE, ARIZONA

JAN 1991 — 17323 — P-17446

Sheet 1 of 6

114.91
44-PP-86



Graphic Scale
Scale 1" = 20'
DRAINAGE OPENING AT RETAINING WALL
73RD.
PLACE
CAMINO DEL MONTE
STARLA DRIVE
SOFTWIND DRIVE
MATCH LINE SEE SHEET 3
MATCH LINE SEE SHEET 4
(Not A Part)
17
18
Construct New Pad 1876.70
Fin. Fl. 1877.37 (Min.)
19
Fin. Fl. 1877.7 (Min.)
20
Construct New Pad 1878.15
Fin. Fl. 1878.82 (Min.)
21
Construct New Pad 1879.57
22
Construct New Pad 1880.99
15
Construct New Pad 1876.47
Fin. Fl. 1877.14 (Min.)
14
Construct New Pad 1876.96
Fin. Fl. 1877.63
13
Construct New Pad 1878.16
Fin. Fl. 1878.83 (Min.)
55
Construct New Pad 1876.63
Fin. Fl. 1877.30 (Min.)
56
Construct New Pad 1876.63
Fin. Fl. 1877.30 (Min.)
57
Construct New Pad 1877.48
Fin. Fl. 1878.15 (Min.)
58
PAD 1877.5
54
Construct New Pad 1879.96
Fin. Fl. 1880.63 (Min.)
53
Construct New Pad 1881.22
Fin. Fl. 1881.89 (Min.)
52
Construct New Pad 1882.63
Fin. Fl. 1883.30 (Min.)
51
PAD 1883.1
45
Construct New Pad 1880.14
Fin. Fl. 1880.81 (Min.)
46
OK
47
OK
48
TRACT "C" (Retention Basin)
Top of Slope
Construct 218 L.F. Retaining Wall
Construct 200 L.F. Retaining Wall
Construct 240 L.F. Retaining Wall See Detail Sheet 6
Match End of Exist. Retaining Wall
Excavate For Retaining Wall and Backfill as required See Det. Sheet 6
Backfill and Compact Against Retaining Wall See Det. Sheet 6
Reshape bottom of Retention, Excavate for Retaining Walls and Backfill as required - See Det. Sht. 6
Backfill and Compact against Retaining Wall Per Soil Engineer Recommendation
= Denotes Not A Part Of This Project.
SOUTHWEST SAVINGS
GRADING AND DRAINAGE PLAN
PINNACLE PEAK VILLA
SCOTTSDALE, ARIZONA
KEI
Keogh Engineering, Inc.
JAN 1991
P-1744

Attachment No. 9

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Site Consultants, Inc.
ENGINEERS · SURVEYORS · CONSULTANTS
113 SOUTH ROCKFORD DRIVE, TEMPE, ARIZONA 85281
TEL: (480) 894-2820, FAX: (480) 894-2847

EXISTING DRAINAGE AREA MAP

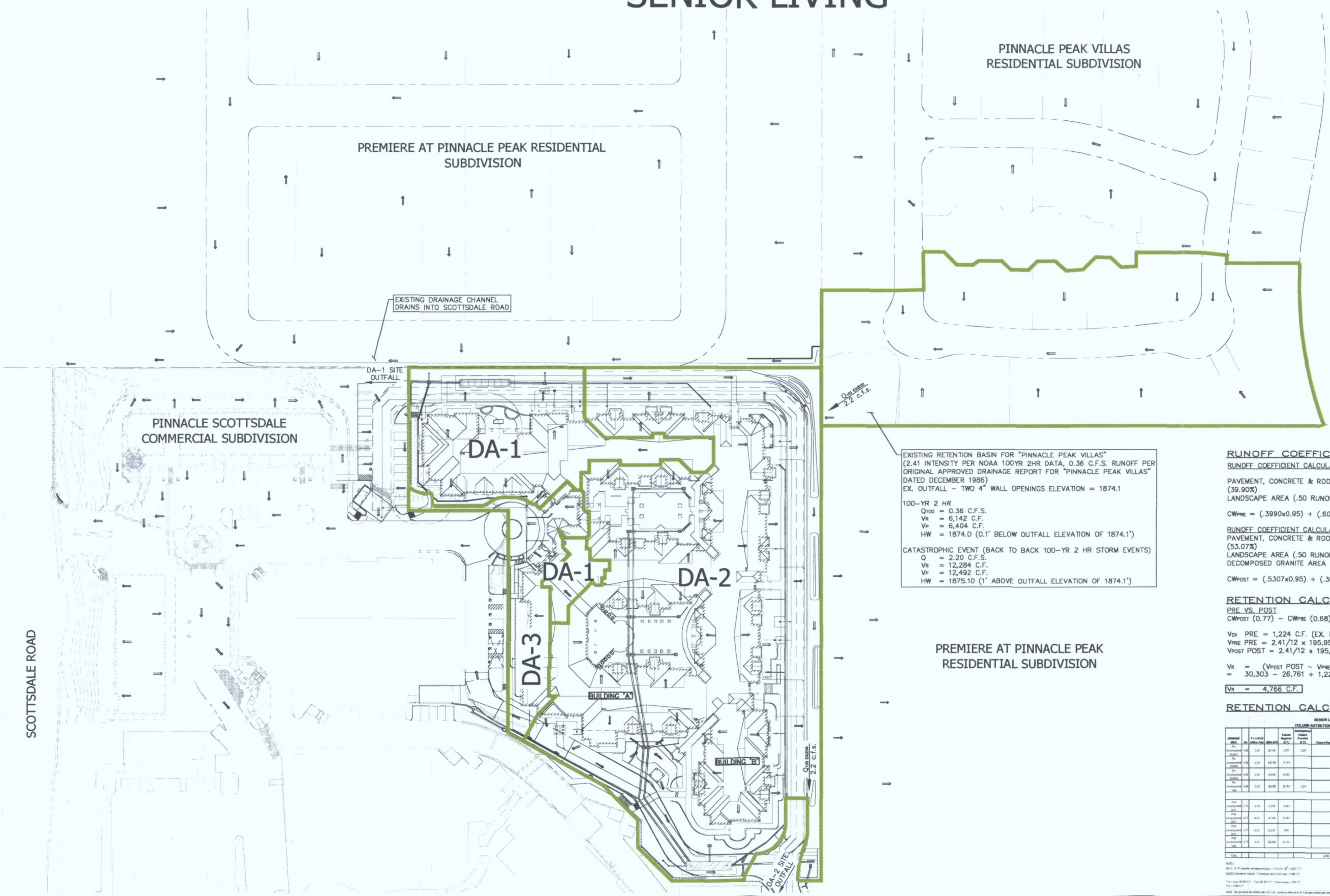
SENIOR LIVING
NEC SCOTTSDALE RD. & PINNACLE PEAK RD.
SCOTTSDALE, ARIZONA

PROJECT NO.:	
SCALE:	1" = 40'
DRAWN BY:	WLG
CHECKED BY:	MJC
DATE:	6-17-2016
DWG:	2098-C-DA-ex.dwg

Attachment No. 10

RETENTION VOLUME ANALYSIS EXHIBIT

SENIOR LIVING



EXISTING RETENTION BASIN FOR "PINNACLE PEAK VILLAS"
(2.41 INTENSITY PER NOAA 100YR 2HR DATA, 0.36 C.F.S. RUNOFF PER ORIGINAL APPROVED DRAINAGE REPORT FOR "PINNACLE PEAK VILLAS" DATED DECEMBER 1986)
EX. OUTFALL – TWO 4" WALL OPENINGS ELEVATION = 1874.1

100–YR 2 HR
- Q_{100} = 0.36 C.F.S.
- V_R = 6,142 C.F.
- V_P = 6,404 C.F.
- HW = 1874.0 (0.1' BELOW OUTFALL ELEVATION OF 1874.1')

CATASTROPHIC EVENT (BACK TO BACK 100–YR 2 HR STORM EVENTS)
- Q = 2.20 C.F.S.
- V_R = 12,284 C.F.
- V_P = 12,492 C.F.
- HW = 1875.10 (1' ABOVE OUTFALL ELEVATION OF 1874.1')

RUNOFF COEFFICIENT CALCULATIONS

RUNOFF COEFFICIENT CALCULATION (EXISTING CONDITION)

PAVEMENT, CONCRETE & ROOF AREA (0.95 RUNOFF COEFFICIENT): 78,193 S.F. (39.90%)
LANDSCAPE AREA (.50 RUNOFF COEFFICIENT): 117,763 S.F. (60.10%)

$CW_{PRE} = (.3990 \times 0.95) + (.6010 \times .50) = 0.68$

RUNOFF COEFFICIENT CALCULATION (POST CONDITION)
PAVEMENT, CONCRETE & ROOF AREA (0.95 RUNOFF COEFFICIENT): 104,005 S.F. (53.07%)
LANDSCAPE AREA (.50 RUNOFF COEFFICIENT): 75,439 S.F. (38.50%)
DECOMPOSED GRANITE AREA (0.88 COEFFICIENT): 16,512 S.F. (8.43%)

$CW_{POST} = (.5307 \times 0.95) + (.3850 \times 0.50) + (.0843 \times 0.88) = 0.77$

RETENTION CALCULATIONS – PRE VS POST

PRE VS. POST
CW_{POST} (0.77) – CW_{PRE} (0.68) (100 YR–2HR STORM)

V_{EX} PRE = 1,224 C.F. (EX. BASIN 1, EXISTING DA–1)
V_{PRE} PRE = 2.41/12 x 195,956 SQ.FT. x 0.68= 26,761 C.F.
V_{POST} POST = 2.41/12 x 195,956 SQ.FT. x 0.77= 30,303 C.F.

V_R = (V_{POST} POST – V_{PRE} PRE + V_{EX} PRE)
= 30,303 – 26,761 + 1,224

V_R = 4,766 C.F.

RETENTION CALCULATIONS

SENIOR LIVING
VOLUME RETENTION CALCULATIONS

DRAINAGE AREA	Cw	P = 2.41/12 (100yr 2-hr)	AREA (SF)	Volume Required (C.F.)	Developed Volume Provided (C.F.)	Volume Required	Post Development Volume Provided Underground Pipe (C.F.)	Post Development Volume Provided STORMTECH SC-740 SYSTEM (C.F.)	TOTAL VOLUME PROVIDED (C.F.)	Excess Volume (C.F.)	Dissipation Time Hrs.
Pre Development EX.DA1	0.68	0.20	28,155	3,577	1,224						
Pre Development EX.DA2	0.68	0.20	125,755	[illegible]							
Pre Development EX.DA3	0.68	0.20	44,035	6,0[illegible]							
Pre Development Total	0.68	0.20	195,956	26,761	1,224						
Post Development DA-1	0.77	0.20	31,255	4,800				1,346			7.48
Post Development DA-2	0.77	0.20	141,403	21,8[illegible]			3,927				21.82
Post Development DA-3	0.77	0.20	23,297	3,603							
Post Development Total	0.77	0.20	195,956	30,303							
TOTAL						4,766	3,927	1,346	5,273	507	29

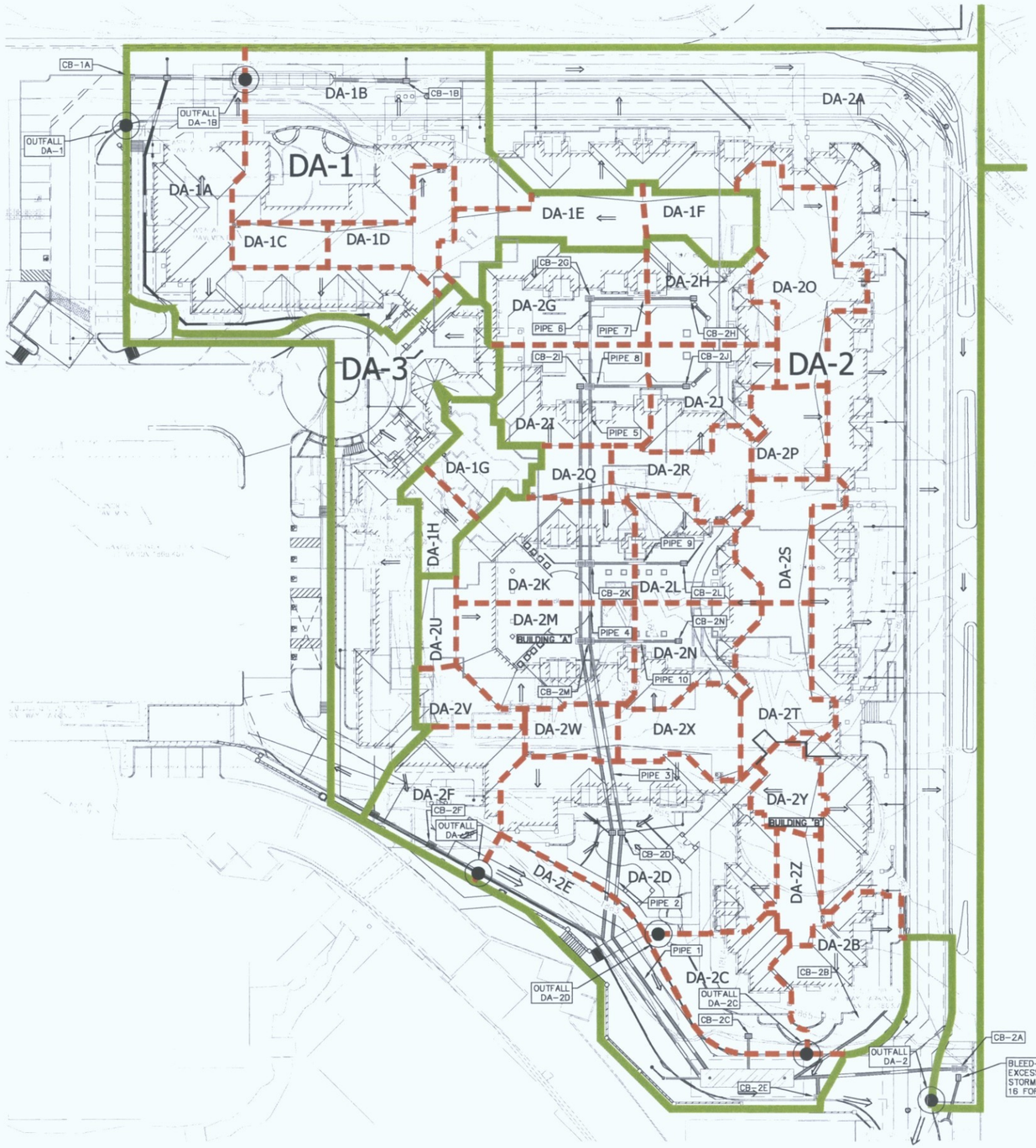
NOTES:
50 L.F. of 10' diameter underground pipe = 3.14 x 5 x [illegible] = 3,927 C.F.
MC[illegible] Stormtech System: 7 chambers and 2 end caps = 1346 C.F.

*V_R = V_{POST} 30,303 C.F. – V_{PRE} 26,761 C.F. + [illegible] 1,224 C.F.
*V_R = 4,766 C.F.

NOTE: [illegible]

REV. REV. REV. REV. REV.		**Site Consultants, Inc.** ENGINEERS · SURVEYORS · CONSULTANTS 113 SOUTH ROCKFORD DRIVE, TEMPE, ARIZONA 85281 TEL: (480) 894–2820, FAX: (480) 894–2847	PROPOSED CONDITION DRAINAGE AREA MAP SENIOR LIVING NEC SCOTTSDALE RD. & PINNACLE PEAK RD. SCOTTSDALE, ARIZONA	PROJECT NO.: SCALE: 1" = 50' DRAWN BY: WLG CHECKED BY: MJC DATE: 6–17–2016 DWG: 2098–C–DA.dwg	1 OF 1

DRAINAGE AREA - INLET CALCULATIONS
SENIOR LIVING



PEAK DISCHARGE (SURFACE RUNOFF)

Q = CIA *Peak discharge (cfs)*
C= *Runoff coefficient (0.77 onsite areas)*
I= *Intensity value (in/hr) based on NOAA data*
A= *Size of tributary area (acres)*

On-Site Drainage Area	C	I_{10} (in/hr)	I_{100} (in/hr)	A (acres)	Q_{10} (cfs)	Q_{100} (cfs)
DA-1A	0.77	4.00	6.25	0.27	0.83	**1.30**
DA-1B	0.77	4.00	6.25	0.28	0.85	**1.33**
DA-2A	0.77	4.00	6.25	1.23	3.79	**5.91**
DA-2B	0.77	4.00	6.25	0.10	0.32	**0.49**
DA-2C	0.77	4.00	6.25	0.09	0.28	**0.44**
DA-2D	0.77	4.00	6.25	0.24	0.74	**1.16**
DA-2E	0.77	4.00	6.25	0.19	0.59	**0.92**
DA-2F	0.77	4.00	6.25	0.10	0.32	**0.49**
DA-2G	0.77	4.00	6.25	0.10	0.32	**0.50**
DA-2H	0.77	4.00	6.25	0.07	0.22	**0.35**
DA-2I	0.77	4.00	6.25	0.10	0.31	**0.48**
DA-2J	0.77	4.00	6.25	0.07	0.23	**0.36**
DA-2K	0.77	4.00	6.25	0.12	0.36	**0.56**
DA-2L	0.77	4.00	6.25	0.07	0.22	**0.34**
DA-2M	0.77	4.00	6.25	0.11	0.35	**0.55**
DA-2N	0.77	4.00	6.25	0.07	0.21	**0.33**

NOTE: Time of concentration assumed to be 10 minutes for intensity values.

Roof Drain Drainage Area	C	I_{10} (in/hr)	I_{100} (in/hr)	A (acres)	Q_{10} (cfs)	Q_{100} (cfs)
DA -1C	0.95	5.26	8.21	0.03	0.14	**0.22**
DA -1D	0.95	5.26	8.21	0.05	0.27	**0.42**
DA -1E	0.95	5.26	8.21	0.07	0.37	**0.57**
DA -1G	0.95	5.26	8.21	0.04	0.22	**0.34**
DA -1G	0.95	5.26	8.21	0.05	0.25	**0.39**
DA -1H	0.95	5.26	8.21	0.03	0.14	**0.23**
DA-2O	0.95	5.26	8.21	0.10	0.52	**0.81**
DA-2P	0.95	5.26	8.21	0.05	0.23	**0.35**
DA-2Q	0.95	5.26	8.21	0.03	0.14	**0.21**
DA-2R	0.95	5.26	8.21	0.06	0.28	**0.44**
DA-2S	0.95	5.26	8.21	0.06	0.29	**0.46**
DA-2T	0.95	5.26	8.21	0.07	0.36	**0.56**
DA-2U	0.95	5.26	8.21	0.02	0.11	**0.18**
DA-2V	0.95	5.26	8.21	0.03	0.15	**0.23**
DA-2W	0.95	5.26	8.21	0.03	0.16	**0.25**
DA-2X	0.95	5.26	8.21	0.05	0.27	**0.42**
DA-2Y	0.95	5.26	8.21	0.03	0.17	**0.27**
DA-2Z	0.95	5.26	8.21	0.03	0.16	**0.25**

NOTE: Time of concentration assumed to be 5 minutes for Intensity values.

INLET CAPACITY FOR SURFACE RUNOFF
PROPOSED IMPROVEMENTS

MAG 535 Type 'F' GRATE Inlet Calculations (100-yr 2-hr Event)

Grate ID	Drainage Area	Q_{flow} to inlet (cfs)	C_w Orifice Coefficient	P (ft)	Clogging Factor 50%	$P_{Reduced}$	d (ft)	$Q_{capacity}$ (cfs)	Number of Grates	$Q_{opening}$ (cfs)	$Q_{opening} > Q_{flow\ inlet}$	Overflow Elevation
CB-1A	DA-1A	1.30	3.0	11.67	0.50	5.84	0.5	6.2	1.0	6.2	OK	1871.9
CB-1B	DA-1B	1.33	3.0	11.67	0.50	5.84	0.5	6.2	1.0	6.2	OK	1872.7
CB-2A	DA-2A	5.91	3.0	18.68	0.50	9.34	0.5	9.9	2.0	9.9	OK	1860.5
CB-2B	DA-2B	0.49	3.0	12.56	0.50	6.28	0.5	6.7	1.0	6.7	OK	1862.85
CB-2C	DA-2C	0.44	3.0	11.67	0.50	5.84	0.2	1.6	1.0	1.6	OK	1863
CB-2D	DA-2D	1.16	3.0	11.67	0.50	5.84	0.2	1.6	1.0	1.6	OK	1868
CB-2E	DA-2E	0.92	3.0	8.29	0.50	4.15	0.4	3.1	1.0	3.1	OK	1862.4
CB-2F	DA-2F	0.49	3.0	8.29	0.50	4.15	0.2	1.1	1.0	1.1	OK	1873.3
CB-2G	DA-2G	0.50	3.0	11.67	0.50	5.84	0.5	6.2	1.0	6.2	OK	COURTYARD
CB-2H	DA-2H	0.35	3.0	11.67	0.50	5.84	0.5	6.2	1.0	6.2	OK	COURTYARD
CB-2I	DA-2I	0.48	3.0	11.67	0.50	5.84	0.5	6.2	1.0	6.2	OK	COURTYARD
CB-2J	DA-2J	0.36	3.0	11.67	0.50	5.84	0.5	6.2	1.0	6.2	OK	COURTYARD
CB-2K	DA-2K	0.56	3.0	11.67	0.50	5.84	0.5	6.2	1.0	6.2	OK	COURTYARD
CB-2L	DA-2L	0.34	3.0	11.67	0.50	5.84	0.5	6.2	1.0	6.2	OK	COURTYARD
CB-2M	DA-2M	0.55	3.0	11.67	0.50	5.84	0.5	6.2	1.0	6.2	OK	COURTYARD
CB-2N	DA-2N	0.33	3.0	11.67	0.50	5.84	0.5	6.2	1.0	6.2	OK	COURTYARD

GRATE CATCH BASIN: $Q = C_w P d^{1.5}$
Equation (3.21) Hydraulic Design Manual for Maricopa County

LEGEND

- PROPERTY LINE
- RIGHT OF WAY LINE
- CENTER LINE
- 1180 CONTOUR LINE
- PROPOSED DRAINAGE AREA
- PROPOSED SUB BASIN AREA
- CONCENTRATION POINT

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DRAINAGE AREA-INLET CALCULATIONS
SENIOR LIVING
NEC SCOTTSDALE RD. & PINNACLE PEAK RD.
SCOTTSDALE, ARIZONA

PROJECT NO.:	
SCALE:	1" = 40'
DRAWN BY:	WLG
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DWG:	2098-C-DA-inlet.dwg

INLET CAPACITY FOR SURFACE RUNOFF
PROPOSED IMPROVEMENTS

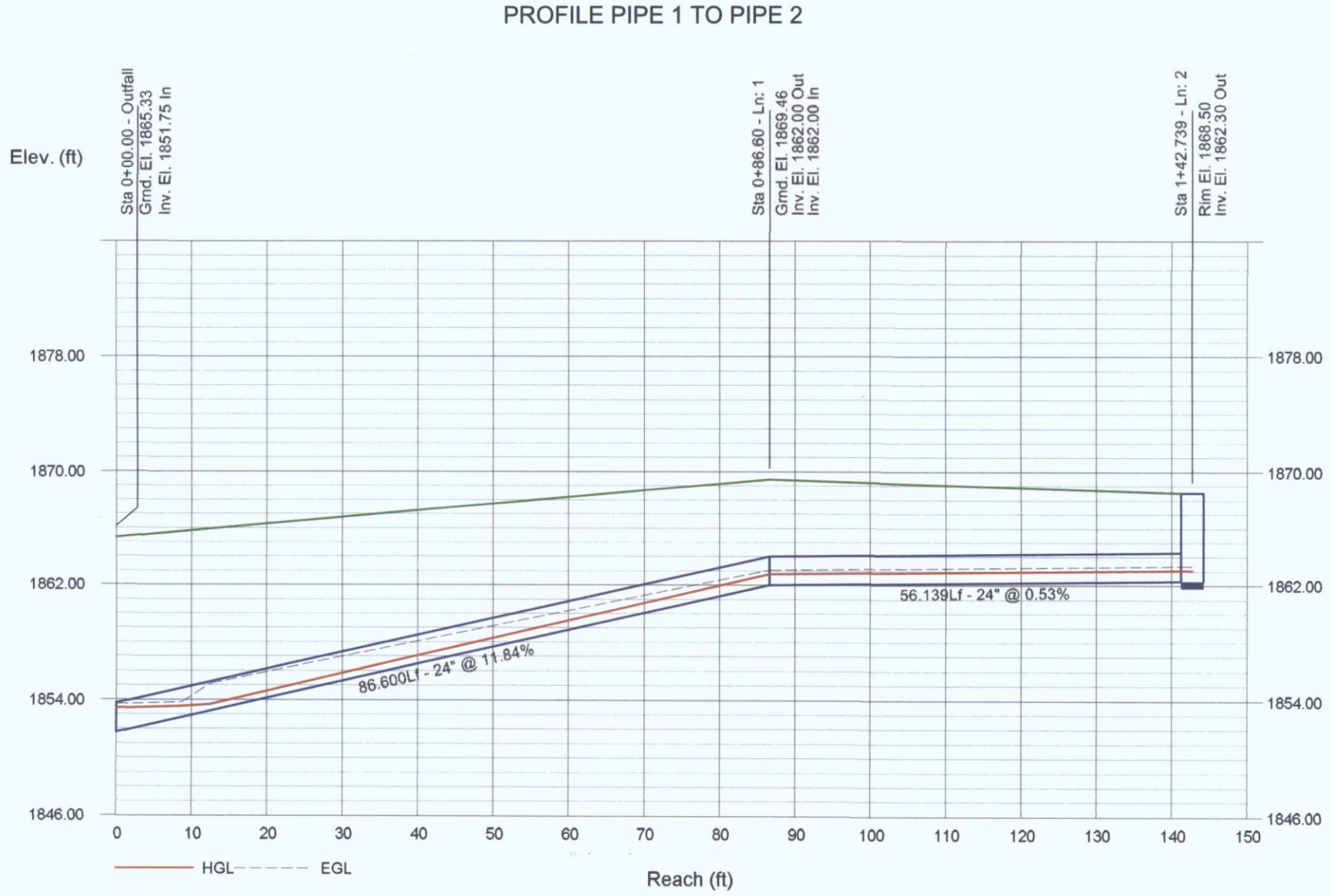
MAG 535 Type 'F' GRATE Inlet Calculations (100-yr 2-hr Event)												
Grate ID	Drainage Area	Q_{100} to inlet (cfs)	C_w Orifice Coefficient	P (ft)	Clogging Factor 50%	$P_{Reduced}$	d (ft)	$Q_{capacity}$ (cfs)	Number of Grates	$Q_{opening}$ (cfs)	$Q_{opening} > Q_{to\ inlet}$	Overflow Elevation
CB-1A	DA-1A	1.30	3.0	11.67	0.50	5.84	0.5	6.2	1.0	6.2	OK	1871.9
CB-1B	DA-1B	1.33	3.0	11.67	0.50	5.84	0.5	6.2	1.0	6.2	OK	1872.7
CB-2A	DA-2A	5.91	3.0	18.68	0.50	9.34	0.5	9.9	2.0	9.9	OK	1860.5
CB-2B	DA-2B	0.49	3.0	12.56	0.50	6.28	0.5	6.7	1.0	6.7	OK	1862.85
CB-2C	DA-2C	0.44	3.0	11.67	0.50	5.84	0.2	1.6	1.0	1.6	OK	1863
CB-2D	DA-2D	1.16	3.0	11.67	0.50	5.84	0.2	1.6	1.0	1.6	OK	1868
CB-2E	DA-2E	0.92	3.0	8.29	0.50	4.15	0.4	3.1	1.0	3.1	OK	1862.4
CB-2F	DA-2F	0.49	3.0	8.29	0.50	4.15	0.2	1.1	1.0	1.1	OK	1873.3
CB-2G	DA-2G	0.50	3.0	11.67	0.50	5.84	0.5	6.2	1.0	6.2	OK	COURTYARD
CB-2H	DA-2H	0.35	3.0	11.67	0.50	5.84	0.5	6.2	1.0	6.2	OK	COURTYARD
CB-2I	DA-2I	0.48	3.0	11.67	0.50	5.84	0.5	6.2	1.0	6.2	OK	COURTYARD
CB-2J	DA-2J	0.36	3.0	11.67	0.50	5.84	0.5	6.2	1.0	6.2	OK	COURTYARD
CB-2K	DA-2K	0.56	3.0	11.67	0.50	5.84	0.5	6.2	1.0	6.2	OK	COURTYARD
CB-2L	DA-2L	0.34	3.0	11.67	0.50	5.84	0.5	6.2	1.0	6.2	OK	COURTYARD
CB-2M	DA-2M	0.55	3.0	11.67	0.50	5.84	0.5	6.2	1.0	6.2	OK	COURTYARD
CB-2N	DA-2N	0.33	3.0	11.67	0.50	5.84	0.5	6.2	1.0	6.2	OK	COURTYARD

GRATE CATCH BASIN: $Q = C_W P d^{1.5}$

Equation (3.21) Hydraulic Design Manual for Maricopa County

Storm Sewer Profile

Proj. file: 2098-Storm drain pipes capacity courtyards - (9-27-2016).stm



Storm Sewer Profile

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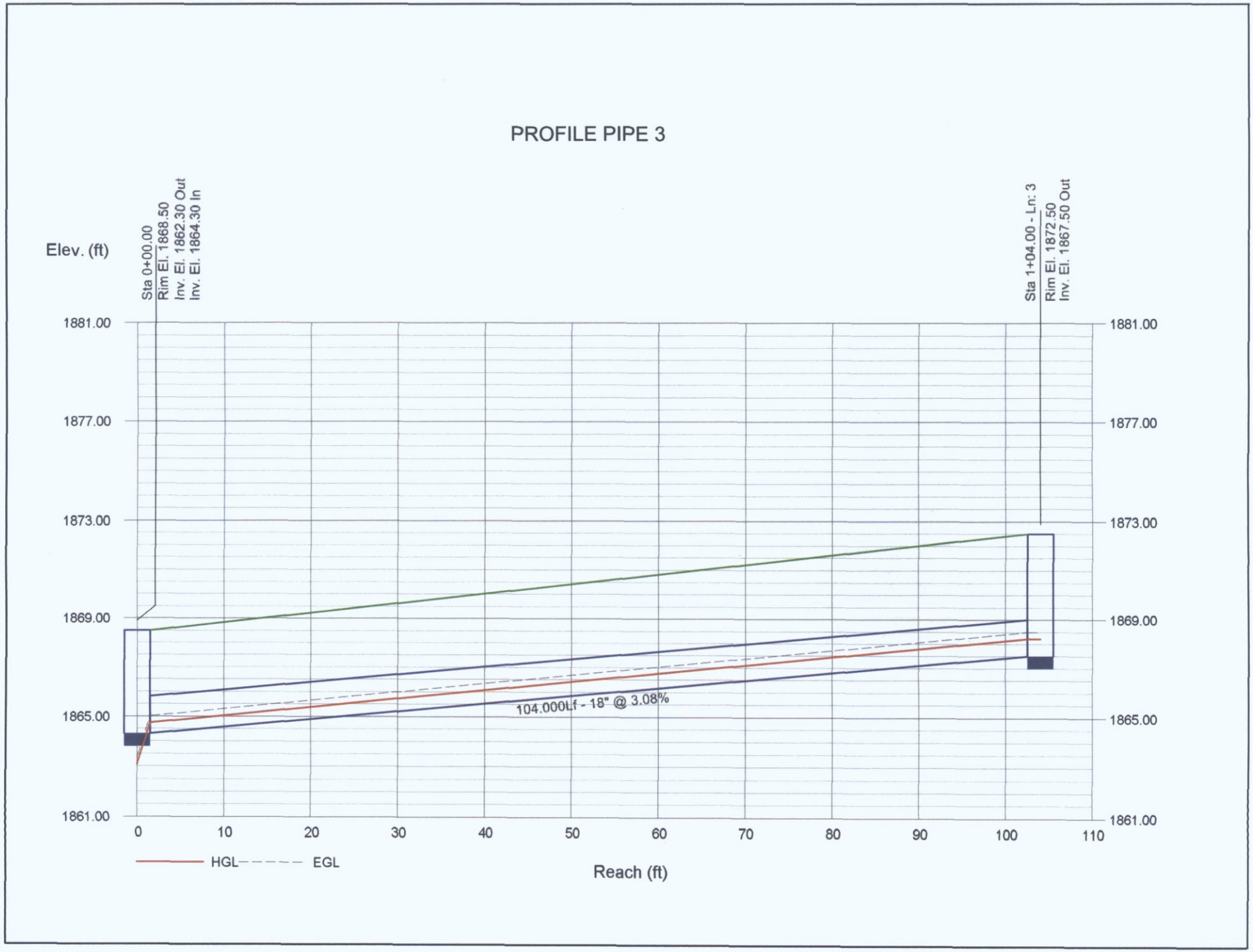
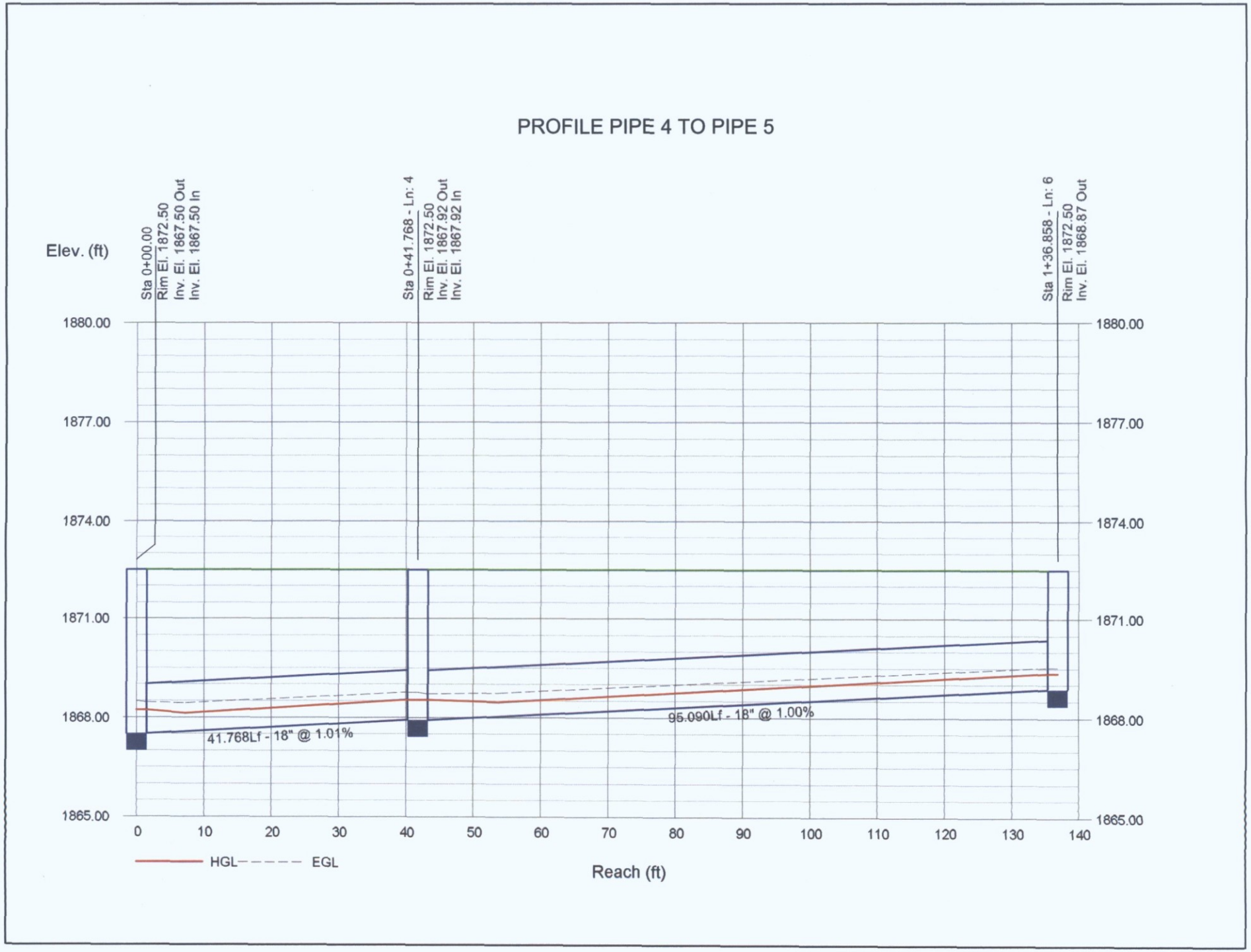


Storm Sewer Profile

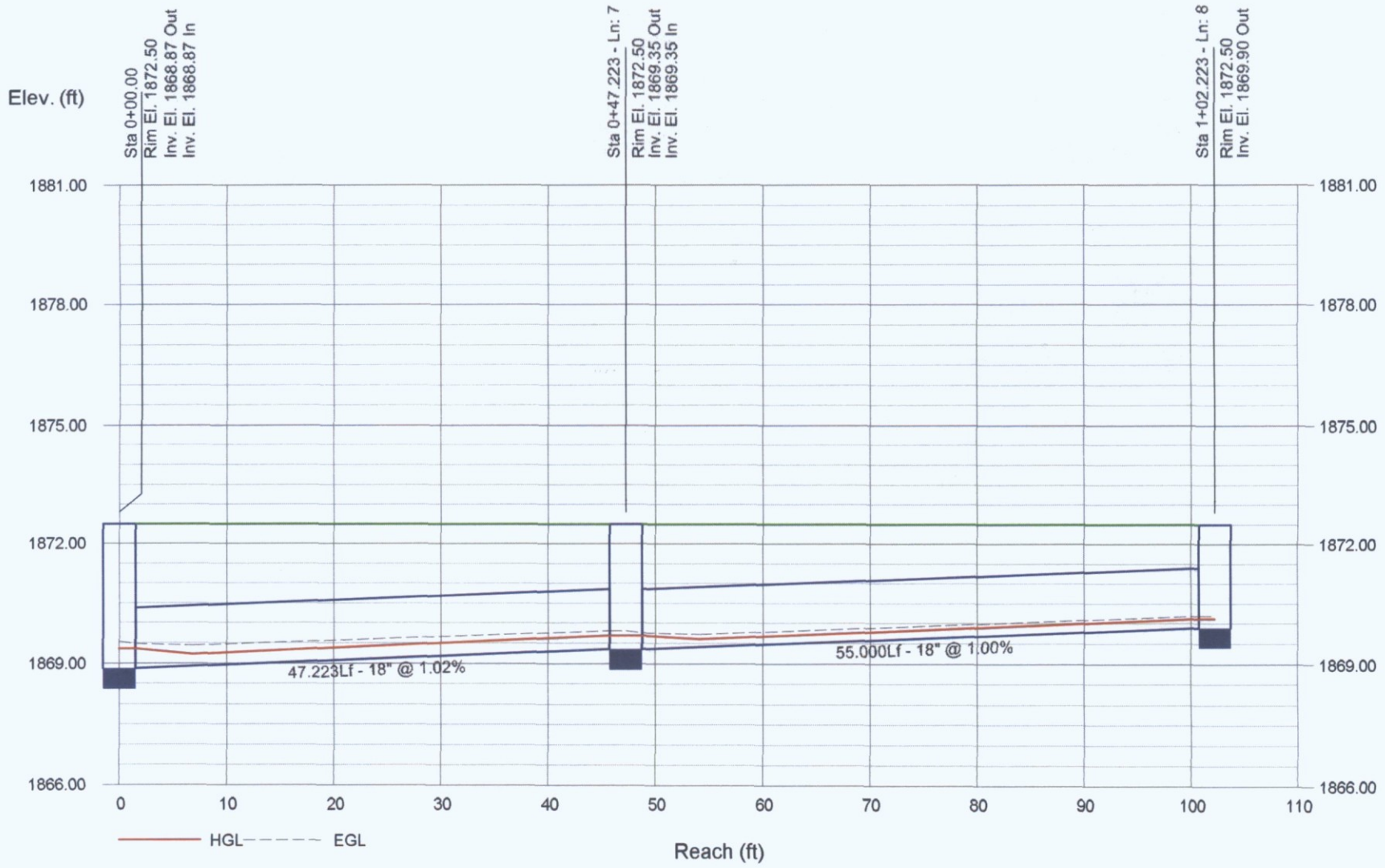
Proj. file: 2098-Storm drain pipes capacity courtyards - (9-27-2016).stm



Storm Sewer Profile

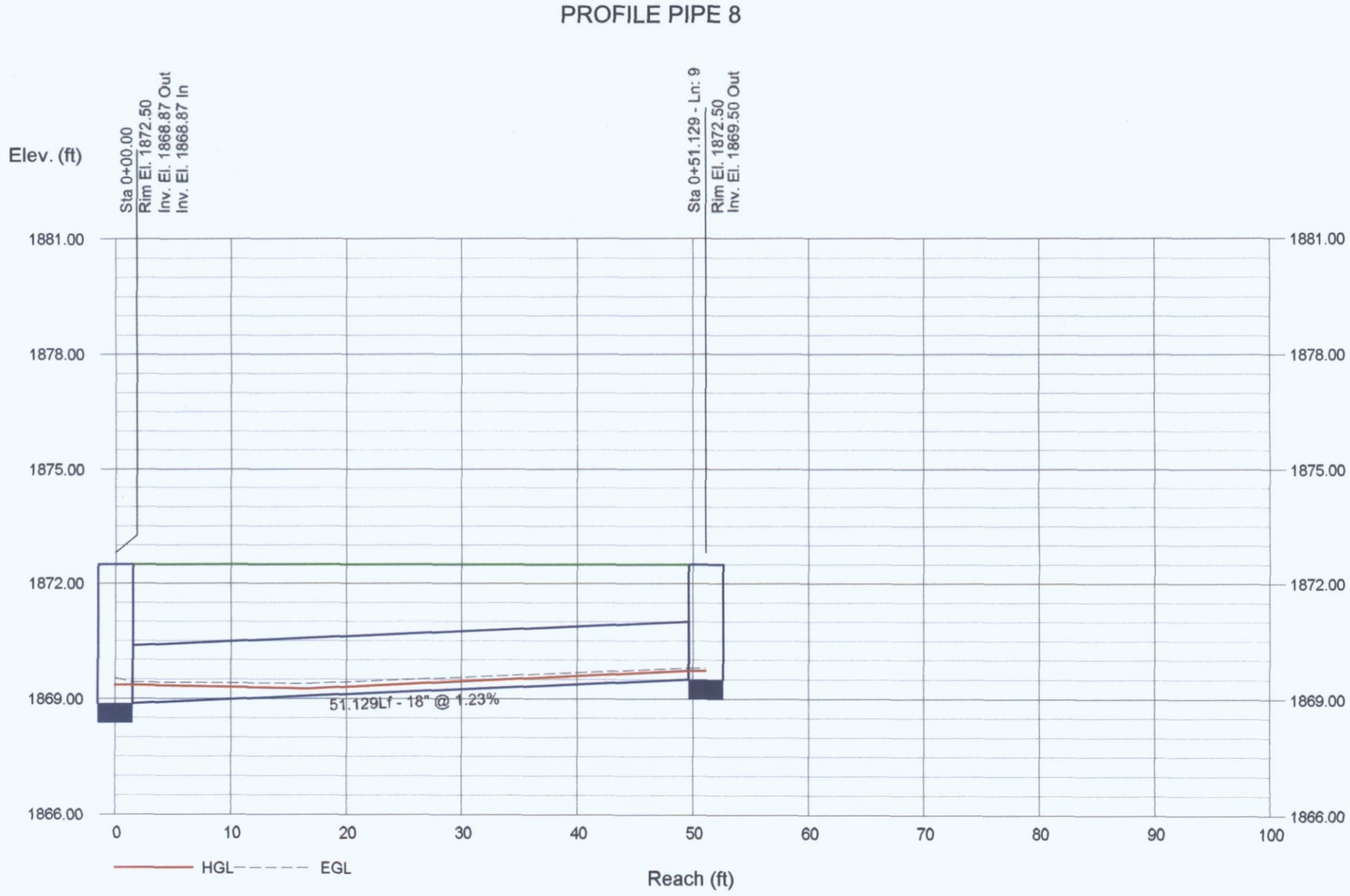
Proj. file: 2098-Storm drain pipes capacity courtyards - (9-27-2016).stm

PROFILE PIPE 6 TO PIPE 7



Storm Sewer Profile

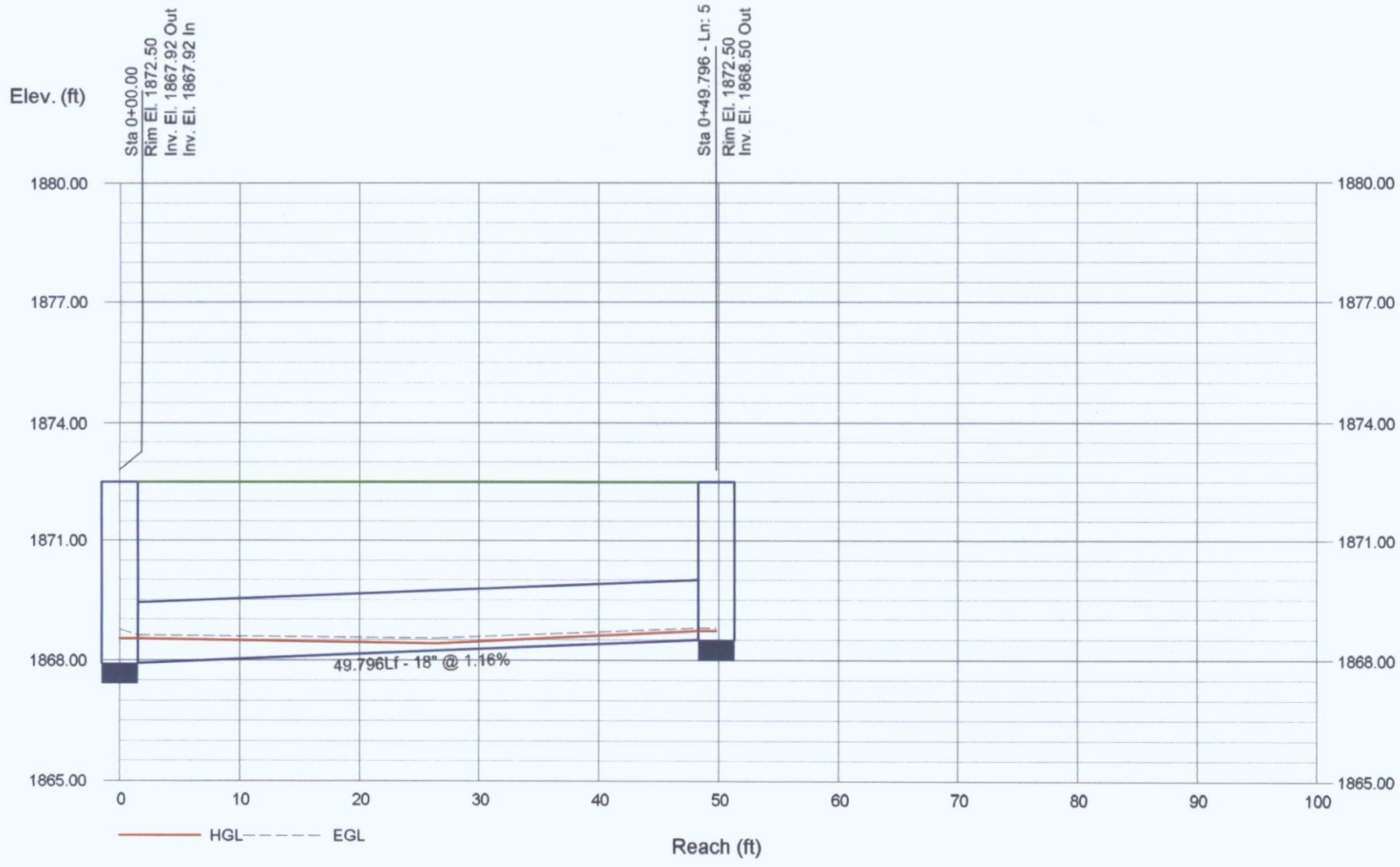
Proj. file: 2098-Storm drain pipes capacity courtyards - (9-27-2016).stm



Storm Sewer Profile

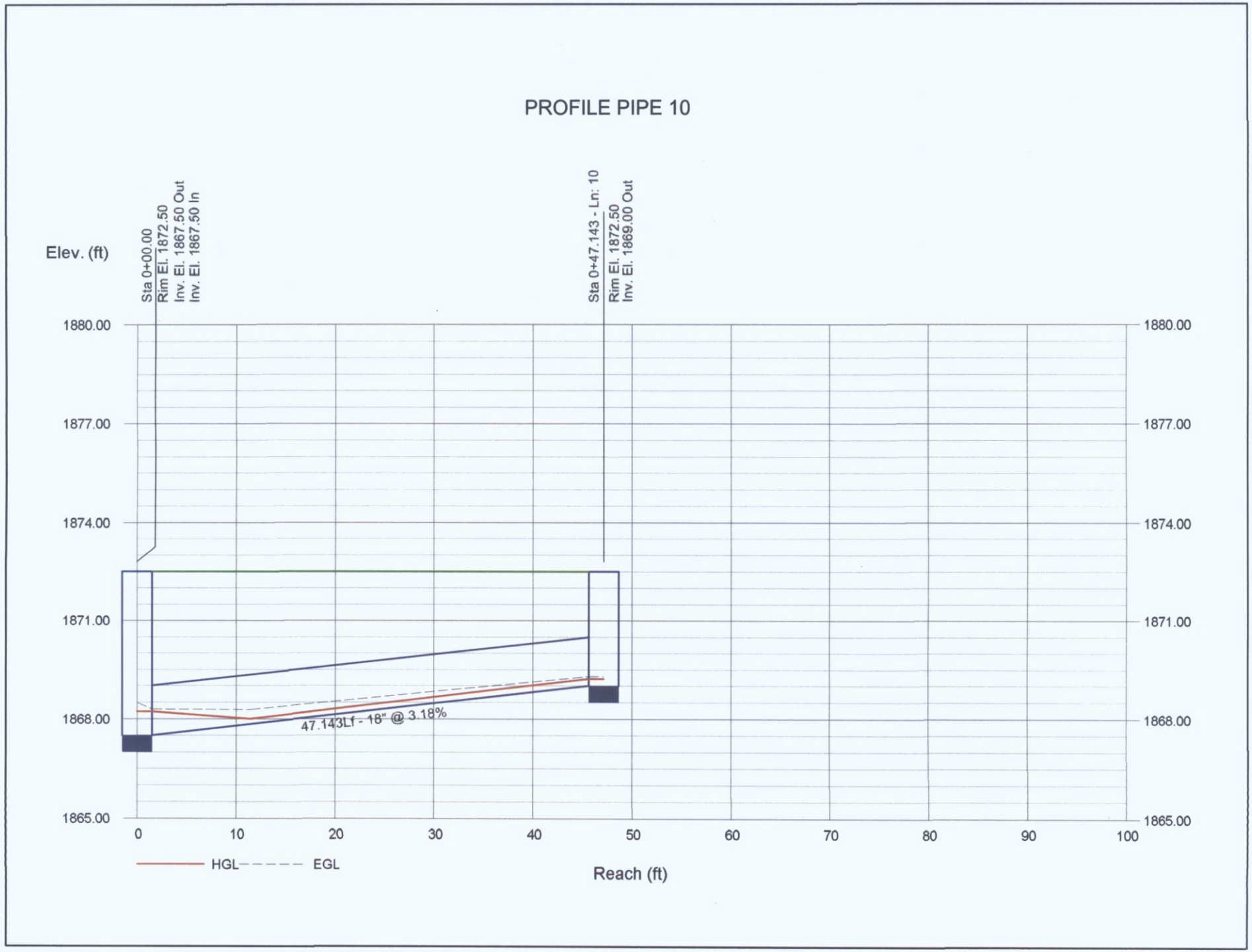
Proj. file: 2098-Storm drain pipes capacity courtyards - (9-27-2016).stm

PROFILE PIPE 9



Storm Sewer Profile

Proj. file: 2098-Storm drain pipes capacity courtyards - (9-27-2016).stm



Summary

Line No.	Line ID	Line Size (in)	Drng Area (ac)	Inlet Time (min)	Runoff Coeff (C)	i Inlet (in/hr)	Total Runoff (cfs)	Flow Rate (cfs)	Invert Dn (ft)	Invert Up (ft)	HGL Dn (ft)	HGL Up (ft)	Depth Dn (ft)	Depth Up (ft)	Vel Dn (ft/s)	Vel Up (ft/s)	Line Length (ft)	n-val Pipe
1	LINE 1	24	0.00	0.0	0.00	0.00	3.29	4.69	1851.75	1862.00	1853.39	1862.76 j	1.64	0.76**	1.70	4.27	86.600	0.012
2	LINE 2	24	0.24	10.0	0.77	6.36	3.35	4.69	1862.00	1862.30	1862.76	1863.06	0.76	0.76**	4.27	4.27	56.139	0.012
3	LINE 3	18	0.12	10.0	0.77	6.36	2.58	3.52	1864.30	1867.50	1864.73	1868.22	0.43	0.72**	8.50	4.23	104.000	0.012
4	LINE 4	18	0.12	10.0	0.77	6.36	1.93	2.60	1867.50	1867.92	1868.22	1868.53 j	0.72	0.61**	3.12	3.85	41.768	0.012
5	LINE 9	18	0.07	10.0	0.77	6.36	0.34	0.34	1867.92	1868.50	1868.53	1868.72 j	0.61	0.22**	0.51	2.19	49.796	0.012
6	LINE 5	18	0.10	10.0	0.77	6.36	1.31	1.67	1867.92	1868.87	1868.53	1869.36 j	0.61	0.48**	2.47	3.37	95.090	0.012
7	LINE 6	18	0.10	10.0	0.77	6.36	0.69	0.83	1868.87	1869.35	1869.36	1869.69 j	0.48	0.34**	1.69	2.78	47.223	0.012
8	LINE 7	18	0.07	10.0	0.77	6.36	0.34	0.34	1869.35	1869.90	1869.69	1870.12 j	0.34	0.22**	1.14	2.19	55.000	0.012
9	LINE 8	18	0.07	10.0	0.77	6.36	0.34	0.34	1868.87	1869.50	1869.36	1869.72 j	0.48	0.22**	0.69	2.19	51.129	0.012
10	LINE 10	18	0.07	10.0	0.77	6.36	0.33	0.33	1867.50	1869.00	1868.22	1869.21 j	0.72	0.21**	0.40	2.17	47.143	0.012

Project File: 2098-Storm drain pipes capacity courtyards - (9-27-2016).stm | Number of lines: 10 | Date: 9/27/2016

NOTES: Intensity = 78.56 / (Inlet time + 9.30) ^ 0.85 -- Return period = 100 Yrs. ; ** Critical depth ; System flows limited to inlet captured flows.

Hydraulic Grade Line Computations

Line	Size	Q	Downstream								Len	Upstream								Check		JL coeff	Minor loss
			Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf		Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf	Ave Sf	Enrgy loss		
	(in)	(cfs)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(ft)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(%)	(ft)	(K)	(ft)
1	24	4.69	1851.75	1853.39	1.64	1.10	1.70	0.28	1853.67	0.000	86.600	1862.00	1862.76 j	0.76**	1.10	4.27	0.28	1863.05	0.000	0.000	n/a	0.69	n/a
2	24	4.69	1862.00	1862.76	0.76*	1.10	4.27	0.28	1863.05	0.000	56.139	1862.30	1863.06	0.76**	1.10	4.27	0.28	1863.35	0.000	0.000	n/a	0.50	n/a
3	18	3.52	1864.30	1864.73	0.43*	0.41	8.50	0.28	1865.01	0.000	104.000	1867.50	1868.22	0.72**	0.83	4.23	0.28	1868.49	0.000	0.000	n/a	1.50	0.42
4	18	2.60	1867.50	1868.22	0.72	0.68	3.12	0.23	1868.45	0.000	41.768	1867.92	1868.53 j	0.61**	0.68	3.85	0.23	1868.76	0.000	0.000	n/a	1.50	0.34
5	18	0.34	1867.92	1868.53	0.61	0.16	0.51	0.07	1868.61	0.000	49.796	1868.50	1868.72 j	0.22**	0.16	2.19	0.07	1868.79	0.000	0.000	n/a	1.00	0.07
6	18	1.67	1867.92	1868.53	0.61	0.49	2.47	0.18	1868.71	0.000	95.090	1868.87	1869.36 j	0.48**	0.49	3.37	0.18	1869.53	0.000	0.000	n/a	1.50	n/a
7	18	0.83	1868.87	1869.36	0.48	0.30	1.69	0.12	1869.48	0.000	47.223	1869.35	1869.69 j	0.34**	0.30	2.78	0.12	1869.81	0.000	0.000	n/a	1.50	0.18
8	18	0.34	1869.35	1869.69	0.34	0.16	1.14	0.07	1869.76	0.000	55.000	1869.90	1870.12 j	0.22**	0.16	2.19	0.07	1870.19	0.000	0.000	n/a	1.00	0.07
9	18	0.34	1868.87	1869.36	0.48	0.16	0.69	0.07	1869.43	0.000	51.129	1869.50	1869.72 j	0.22**	0.16	2.19	0.07	1869.79	0.000	0.000	n/a	1.00	0.07
10	18	0.33	1867.50	1868.22	0.72	0.15	0.40	0.07	1868.29	0.000	47.143	1869.00	1869.21 j	0.21**	0.15	2.17	0.07	1869.29	0.000	0.000	n/a	1.00	0.07

Project File: 2098-Storm drain pipes capacity courtyards - (9-27-2016).stm | Number of lines: 10 | Run Date: 9/27/2016

Notes: * Normal depth assumed.; ** Critical depth.; j-Line contains hyd. jump. ; c = cir e = ellip b = box

Attachment No. 12

SENIOR LIVING

VOLUME RETENTION CALCULATIONS

DRAINAGE AREA	*Cw*	*P = 2.41/12 (100-yr 2-hr)*	*AREA (SF)*	*Volume Required (C.F.)*	*Developement Volume Provided (C.F.)*	*Volume Required*	*Post Development Volume Provided Undeground Pipe (C.F.)*	*Post Development Volume Provided STORMTECH 3500 SYSTEM (C.F.)*	*TOTAL VOLUME PROVIDED (C.F.)*	*Excess Volume (C.F.)*	*Dissipation Time Hrs.*
Pre Development EX-DA1	0.68	0.20	26,195	3,577	1,224						
Pre Development EX-DA2	0.68	0.20	125,756	17,174							
Pre Development EX-DA3	0.68	0.20	44,005	6,010							
Pre Development Total	0.68	0.20	195,956	26,761	1,224						
Post Development DA-1	0.77	0.20	31,256	4,833				1346			7.48
Post Development DA-2	0.77	0.20	141,403	21,867			3,927				21.82
Post Development DA-3	0.77	0.20	23,297	3,603							
Post Development Total	0.77	0.20	195,956	30,303							
TOTAL						4,766	3,927	1,346	5,273	507	29

NOTES

50 L.F. of 10' diamater underground pipe = 3.14 x 5 x 50^2 = 3,927 C.F.

MC3500 Stormtech System: 7 chambers and 2 end caps = 1346 C.F.

*$V_R = V_{POST}$ 30,303 C.F. - V_{PRE} 26,761 C.F. + $V_{PRE\ PROVIDED}$ 1,224 C.F.

*V_R = 4,766 C.F.

NOTE: The assumed perculation rate is 0.1 cfs. Using a safety factor of 2, the perculation rate used is 0.05 cfs.

NOAA Atlas 14, Volume 1, Version 5
Location name: Scottsdale, Arizona, US*
Latitude: 33.7014°, Longitude: -111.9228°
Elevation: 1872 ft*
* source: Google Maps

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.208 (0.173-0.254)	0.271 (0.227-0.332)	0.366 (0.303-0.447)	0.438 (0.361-0.533)	0.535 (0.433-0.648)	0.609 (0.487-0.734)	0.684 (0.539-0.822)	0.760 (0.589-0.913)	0.861 (0.651-1.04)	0.939 (0.696-1.13)
10-min	0.316 (0.262-0.387)	0.412 (0.345-0.505)	0.556 (0.460-0.680)	0.666 (0.548-0.811)	0.813 (0.660-0.987)	0.926 (0.742-1.12)	1.04 (0.820-1.25)	1.16 (0.896-1.39)	1.31 (0.991-1.58)	1.43 (1.06-1.73)
15-min	0.391 (0.326-0.480)	0.511 (0.427-0.627)	0.690 (0.570-0.843)	0.826 (0.680-1.00)	1.01 (0.818-1.22)	1.15 (0.920-1.38)	1.29 (1.02-1.55)	1.43 (1.11-1.72)	1.63 (1.23-1.96)	1.77 (1.31-2.14)
30-min	0.527 (0.438-0.646)	0.688 (0.575-0.844)	0.929 (0.768-1.14)	1.11 (0.916-1.35)	1.36 (1.10-1.65)	1.55 (1.24-1.86)	1.74 (1.37-2.09)	1.93 (1.50-2.32)	2.19 (1.66-2.63)	2.39 (1.77-2.88)
60-min	0.652 (0.542-0.800)	0.851 (0.712-1.04)	1.15 (0.951-1.40)	1.38 (1.13-1.68)	1.68 (1.36-2.04)	1.91 (1.53-2.31)	2.15 (1.69-2.59)	2.39 (1.85-2.87)	2.71 (2.05-3.26)	2.95 (2.19-3.56)
2-hr	0.758 (0.639-0.911)	0.981 (0.827-1.18)	1.30 (1.09-1.56)	1.55 (1.29-1.86)	1.89 (1.55-2.25)	2.15 (1.74-2.55)	2.41 (1.92-2.86)	2.68 (2.10-3.17)	3.03 (2.33-3.59)	3.31 (2.49-3.94)
3-hr	0.823 (0.693-1.00)	1.05 (0.891-1.29)	1.38 (1.16-1.68)	1.63 (1.36-1.98)	1.99 (1.63-2.40)	2.27 (1.84-2.73)	2.57 (2.04-3.08)	2.88 (2.25-3.44)	3.30 (2.51-3.95)	3.64 (2.70-4.36)
6-hr	0.986 (0.850-1.17)	1.25 (1.07-1.47)	1.59 (1.36-1.87)	1.86 (1.58-2.18)	2.23 (1.87-2.61)	2.52 (2.08-2.94)	2.83 (2.30-3.28)	3.14 (2.51-3.65)	3.55 (2.77-4.13)	3.88 (2.96-4.52)
12-hr	1.13 (0.983-1.33)	1.43 (1.24-1.67)	1.80 (1.55-2.10)	2.10 (1.80-2.43)	2.49 (2.11-2.89)	2.80 (2.34-3.23)	3.11 (2.57-3.60)	3.43 (2.79-3.96)	3.85 (3.06-4.47)	4.17 (3.26-4.88)
24-hr	1.34 (1.17-1.55)	1.70 (1.49-1.97)	2.20 (1.92-2.55)	2.61 (2.27-3.00)	3.17 (2.73-3.65)	3.63 (3.09-4.17)	4.10 (3.45-4.73)	4.60 (3.82-5.32)	5.30 (4.31-6.16)	5.85 (4.69-6.86)
2-day	1.47 (1.28-1.70)	1.88 (1.64-2.17)	2.46 (2.14-2.84)	2.94 (2.54-3.37)	3.60 (3.08-4.13)	4.12 (3.50-4.74)	4.68 (3.93-5.40)	5.26 (4.37-6.10)	6.08 (4.96-7.10)	6.74 (5.41-7.93)
3-day	1.57 (1.38-1.81)	2.01 (1.76-2.31)	2.66 (2.32-3.04)	3.19 (2.77-3.63)	3.93 (3.39-4.48)	4.53 (3.88-5.18)	5.18 (4.38-5.94)	5.86 (4.90-6.76)	6.83 (5.61-7.93)	7.63 (6.17-8.93)
4-day	1.68 (1.48-1.92)	2.15 (1.89-2.45)	2.86 (2.51-3.24)	3.44 (3.01-3.89)	4.26 (3.70-4.84)	4.94 (4.26-5.62)	5.68 (4.84-6.48)	6.46 (5.43-7.42)	7.59 (6.26-8.77)	8.51 (6.92-9.93)
7-day	1.91 (1.67-2.19)	2.44 (2.14-2.79)	3.25 (2.85-3.72)	3.92 (3.41-4.47)	4.87 (4.21-5.56)	5.66 (4.85-6.47)	6.50 (5.51-7.46)	7.41 (6.21-8.57)	8.73 (7.17-10.2)	9.81 (7.93-11.5)
10-day	2.08 (1.83-2.38)	2.67 (2.34-3.05)	3.54 (3.10-4.04)	4.26 (3.71-4.84)	5.28 (4.56-6.00)	6.11 (5.24-6.96)	7.01 (5.94-8.02)	7.97 (6.68-9.17)	9.34 (7.69-10.8)	10.5 (8.47-12.3)
20-day	2.60 (2.29-2.96)	3.35 (2.95-3.81)	4.44 (3.90-5.04)	5.28 (4.62-5.99)	6.43 (5.59-7.30)	7.33 (6.33-8.34)	8.27 (7.09-9.45)	9.24 (7.85-10.6)	10.6 (8.86-12.3)	11.6 (9.62-13.6)
30-day	3.07 (2.69-3.49)	3.95 (3.48-4.49)	5.23 (4.59-5.93)	6.21 (5.44-7.03)	7.55 (6.57-8.55)	8.59 (7.43-9.74)	9.67 (8.30-11.0)	10.8 (9.18-12.3)	12.3 (10.3-14.1)	13.5 (11.2-15.6)
45-day	3.61 (3.19-4.09)	4.66 (4.11-5.28)	6.16 (5.43-6.97)	7.30 (6.41-8.26)	8.83 (7.71-10.0)	10.0 (8.68-11.4)	11.2 (9.66-12.8)	12.5 (10.6-14.3)	14.1 (11.9-16.4)	15.5 (12.9-18.0)
60-day	4.02 (3.56-4.55)	5.20 (4.60-5.88)	6.87 (6.06-7.74)	8.09 (7.12-9.13)	9.72 (8.51-11.0)	11.0 (9.54-12.4)	12.2 (10.6-13.9)	13.5 (11.6-15.4)	15.2 (12.9-17.5)	16.5 (13.8-19.1)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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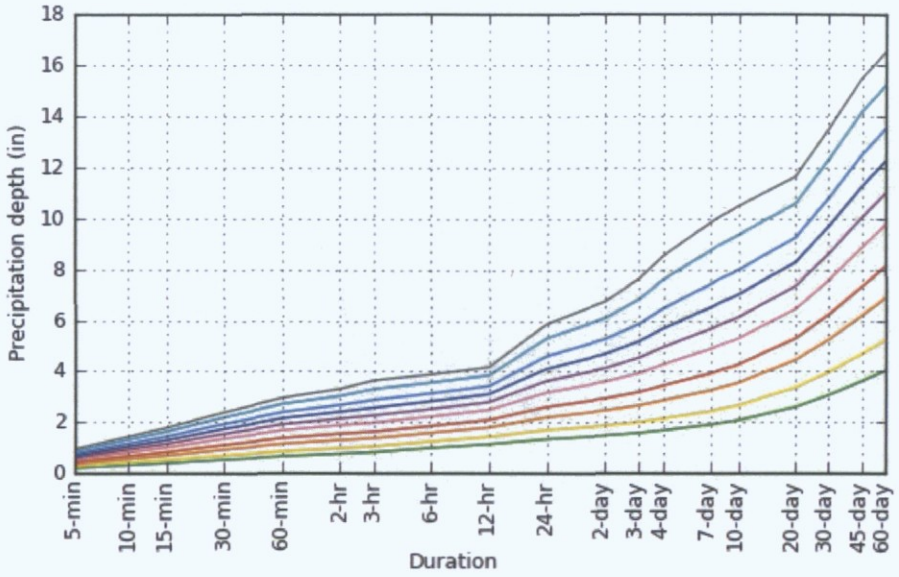
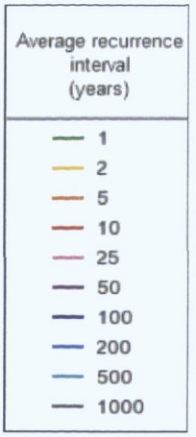
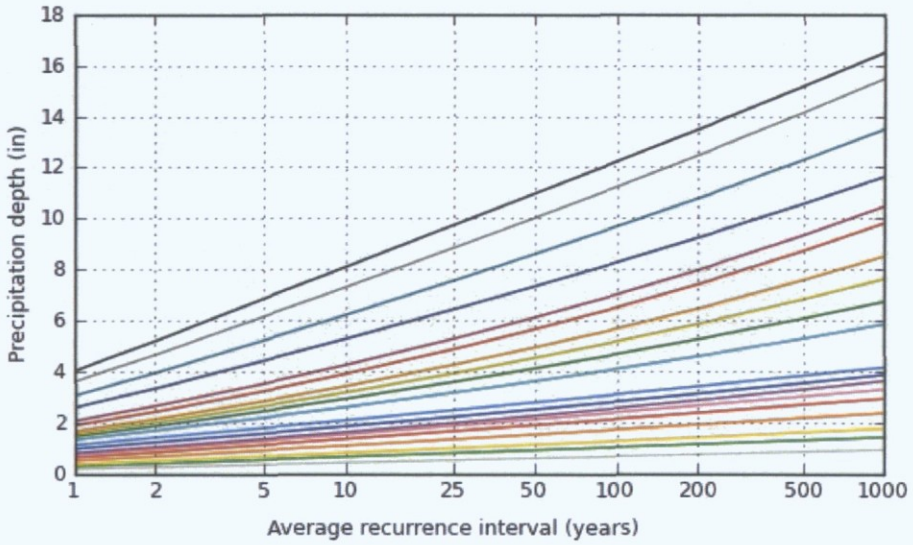
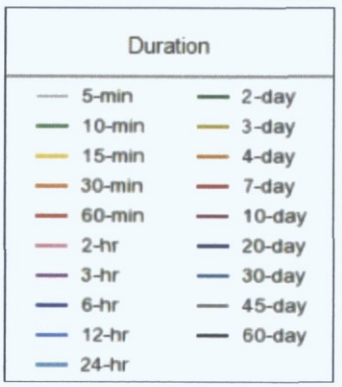
PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 33.7014°, Longitude: -111.9228°









NOAA Atlas 14, Volume 1, Version 5

Created (GMT): Wed May 4 18:31:07 2016

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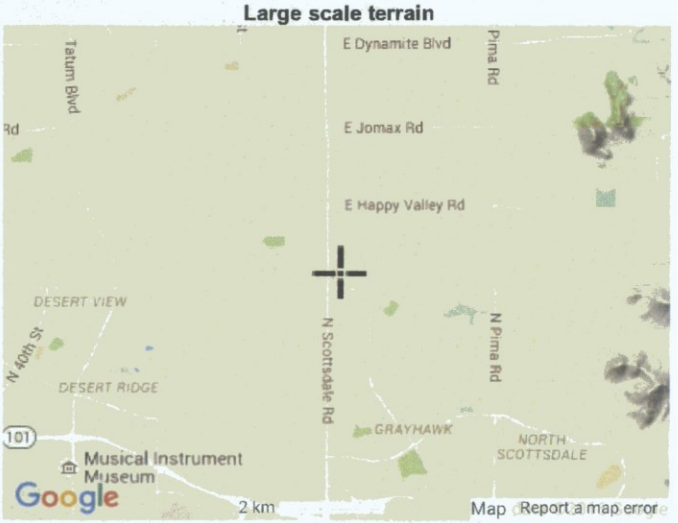
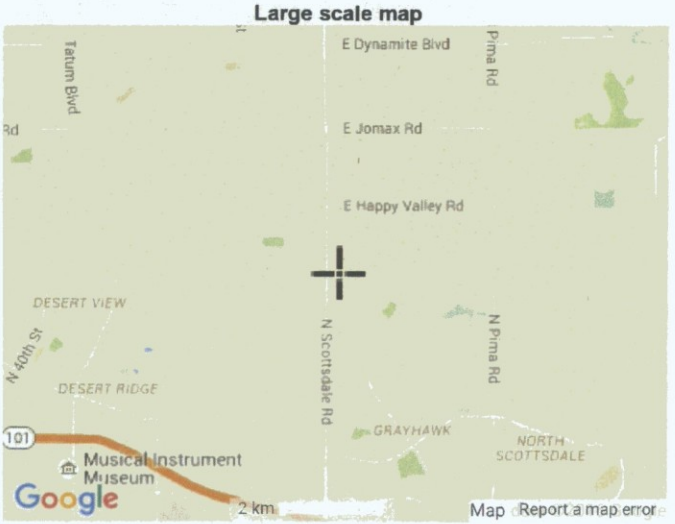
Maps & aerials

Small scale terrain

Large scale terrain



Large scale map



Large scale aerial

NOAA Atlas 14, Volume 1, Version 5
Location name: Scottsdale, Arizona, US*
Latitude: 33.7014°, Longitude: -111.9228°
Elevation: 1872 ft*
* source: Google Maps

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	2.50 (2.08-3.05)	3.25 (2.72-3.98)	4.39 (3.64-5.36)	5.26 (4.33-6.40)	6.42 (5.20-7.78)	7.31 (5.84-8.81)	8.21 (6.47-9.86)	9.12 (7.07-11.0)	10.3 (7.81-12.4)	11.3 (8.35-13.6)
10-min	1.90 (1.57-2.32)	2.47 (2.07-3.03)	3.34 (2.76-4.08)	4.00 (3.29-4.87)	4.88 (3.96-5.92)	5.56 (4.45-6.70)	6.25 (4.92-7.51)	6.94 (5.38-8.33)	7.87 (5.95-9.47)	8.58 (6.35-10.4)
15-min	1.56 (1.30-1.92)	2.04 (1.71-2.51)	2.76 (2.28-3.37)	3.30 (2.72-4.02)	4.03 (3.27-4.89)	4.59 (3.68-5.54)	5.16 (4.06-6.20)	5.74 (4.44-6.89)	6.50 (4.92-7.82)	7.09 (5.25-8.56)
30-min	1.05 (0.876-1.29)	1.38 (1.15-1.69)	1.86 (1.54-2.27)	2.22 (1.83-2.71)	2.72 (2.20-3.29)	3.09 (2.48-3.73)	3.48 (2.74-4.18)	3.86 (2.99-4.64)	4.38 (3.31-5.27)	4.77 (3.53-5.76)
60-min	0.652 (0.542-0.800)	0.851 (0.712-1.04)	1.15 (0.951-1.40)	1.38 (1.13-1.68)	1.68 (1.36-2.04)	1.91 (1.53-2.31)	2.15 (1.69-2.59)	2.39 (1.85-2.87)	2.71 (2.05-3.26)	2.95 (2.19-3.56)
2-hr	0.379 (0.320-0.456)	0.490 (0.414-0.590)	0.652 (0.547-0.782)	0.776 (0.645-0.929)	0.946 (0.776-1.13)	1.07 (0.870-1.27)	1.21 (0.962-1.43)	1.34 (1.05-1.58)	1.52 (1.16-1.80)	1.66 (1.24-1.97)
3-hr	0.274 (0.231-0.334)	0.351 (0.297-0.429)	0.459 (0.385-0.559)	0.544 (0.453-0.660)	0.663 (0.543-0.799)	0.758 (0.612-0.908)	0.855 (0.680-1.03)	0.958 (0.749-1.15)	1.10 (0.834-1.31)	1.21 (0.899-1.45)
6-hr	0.165 (0.142-0.195)	0.208 (0.180-0.246)	0.265 (0.227-0.312)	0.311 (0.264-0.364)	0.373 (0.312-0.435)	0.422 (0.348-0.490)	0.472 (0.384-0.548)	0.524 (0.419-0.609)	0.594 (0.462-0.690)	0.648 (0.494-0.755)
12-hr	0.094 (0.082-0.110)	0.119 (0.103-0.139)	0.149 (0.129-0.174)	0.174 (0.149-0.202)	0.207 (0.175-0.240)	0.232 (0.194-0.268)	0.258 (0.213-0.298)	0.284 (0.232-0.329)	0.319 (0.254-0.371)	0.346 (0.270-0.405)
24-hr	0.056 (0.049-0.064)	0.071 (0.062-0.082)	0.092 (0.080-0.106)	0.109 (0.094-0.125)	0.132 (0.114-0.152)	0.151 (0.129-0.174)	0.171 (0.144-0.197)	0.192 (0.159-0.222)	0.221 (0.180-0.257)	0.244 (0.196-0.286)
2-day	0.031 (0.027-0.035)	0.039 (0.034-0.045)	0.051 (0.045-0.059)	0.061 (0.053-0.070)	0.075 (0.064-0.086)	0.086 (0.073-0.099)	0.097 (0.082-0.112)	0.110 (0.091-0.127)	0.127 (0.103-0.148)	0.140 (0.113-0.165)
3-day	0.022 (0.019-0.025)	0.028 (0.025-0.032)	0.037 (0.032-0.042)	0.044 (0.039-0.050)	0.055 (0.047-0.062)	0.063 (0.054-0.072)	0.072 (0.061-0.083)	0.081 (0.068-0.094)	0.095 (0.078-0.110)	0.106 (0.086-0.124)
4-day	0.017 (0.015-0.020)	0.022 (0.020-0.026)	0.030 (0.026-0.034)	0.036 (0.031-0.041)	0.044 (0.039-0.050)	0.052 (0.044-0.059)	0.059 (0.050-0.068)	0.067 (0.057-0.077)	0.079 (0.065-0.091)	0.089 (0.072-0.103)
7-day	0.011 (0.010-0.013)	0.015 (0.013-0.017)	0.019 (0.017-0.022)	0.023 (0.020-0.027)	0.029 (0.025-0.033)	0.034 (0.029-0.039)	0.039 (0.033-0.044)	0.044 (0.037-0.051)	0.052 (0.043-0.061)	0.058 (0.047-0.069)
10-day	0.009 (0.008-0.010)	0.011 (0.010-0.013)	0.015 (0.013-0.017)	0.018 (0.015-0.020)	0.022 (0.019-0.025)	0.025 (0.022-0.029)	0.029 (0.025-0.033)	0.033 (0.028-0.038)	0.039 (0.032-0.045)	0.044 (0.035-0.051)
20-day	0.005 (0.005-0.006)	0.007 (0.006-0.008)	0.009 (0.008-0.010)	0.011 (0.010-0.012)	0.013 (0.012-0.015)	0.015 (0.013-0.017)	0.017 (0.015-0.020)	0.019 (0.016-0.022)	0.022 (0.018-0.026)	0.024 (0.020-0.028)
30-day	0.004 (0.004-0.005)	0.005 (0.005-0.006)	0.007 (0.006-0.008)	0.009 (0.008-0.010)	0.010 (0.009-0.012)	0.012 (0.010-0.014)	0.013 (0.012-0.015)	0.015 (0.013-0.017)	0.017 (0.014-0.020)	0.019 (0.016-0.022)
45-day	0.003 (0.003-0.004)	0.004 (0.004-0.005)	0.006 (0.005-0.006)	0.007 (0.006-0.008)	0.008 (0.007-0.009)	0.009 (0.008-0.011)	0.010 (0.009-0.012)	0.012 (0.010-0.013)	0.013 (0.011-0.015)	0.014 (0.012-0.017)
60-day	0.003 (0.002-0.003)	0.004 (0.003-0.004)	0.005 (0.004-0.005)	0.006 (0.005-0.006)	0.007 (0.006-0.008)	0.008 (0.007-0.009)	0.008 (0.007-0.010)	0.009 (0.008-0.011)	0.011 (0.009-0.012)	0.011 (0.010-0.013)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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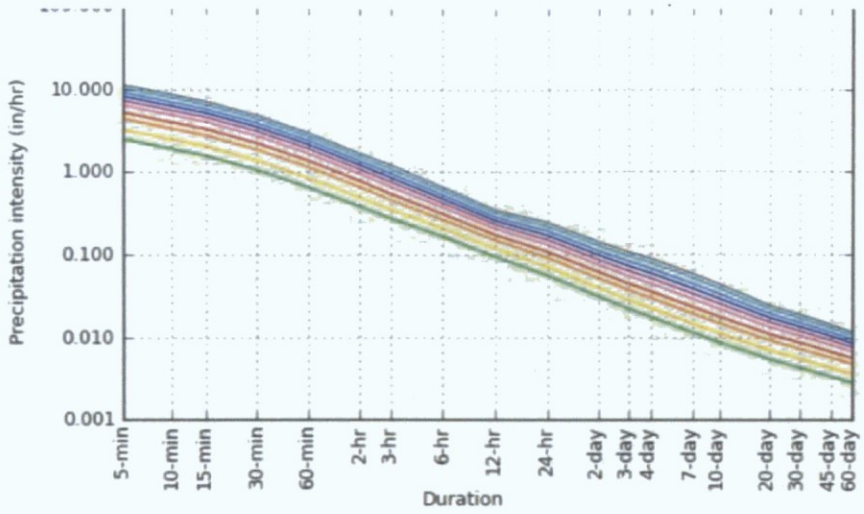
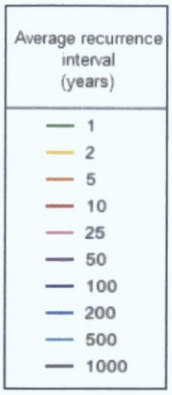
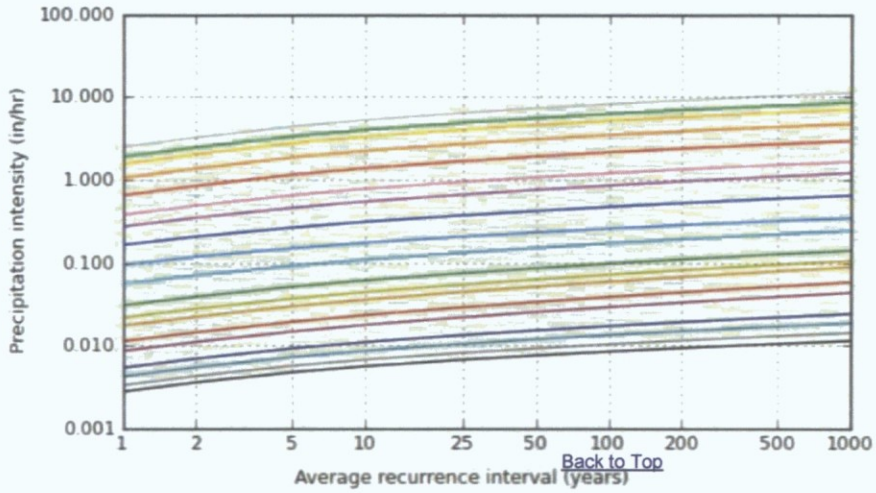
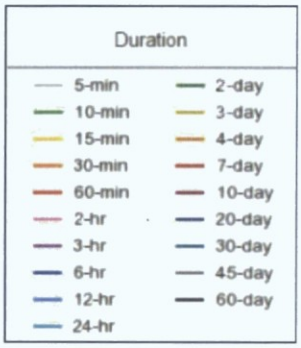
PF graphical









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Maps & aerials

NOAA Atlas 14, Volume 1, Version 5

Created (GMT): Thu Sep 8 20:35:29 2016

Small scale terrain

Large scale terrain

Large scale map

Large scale aerial

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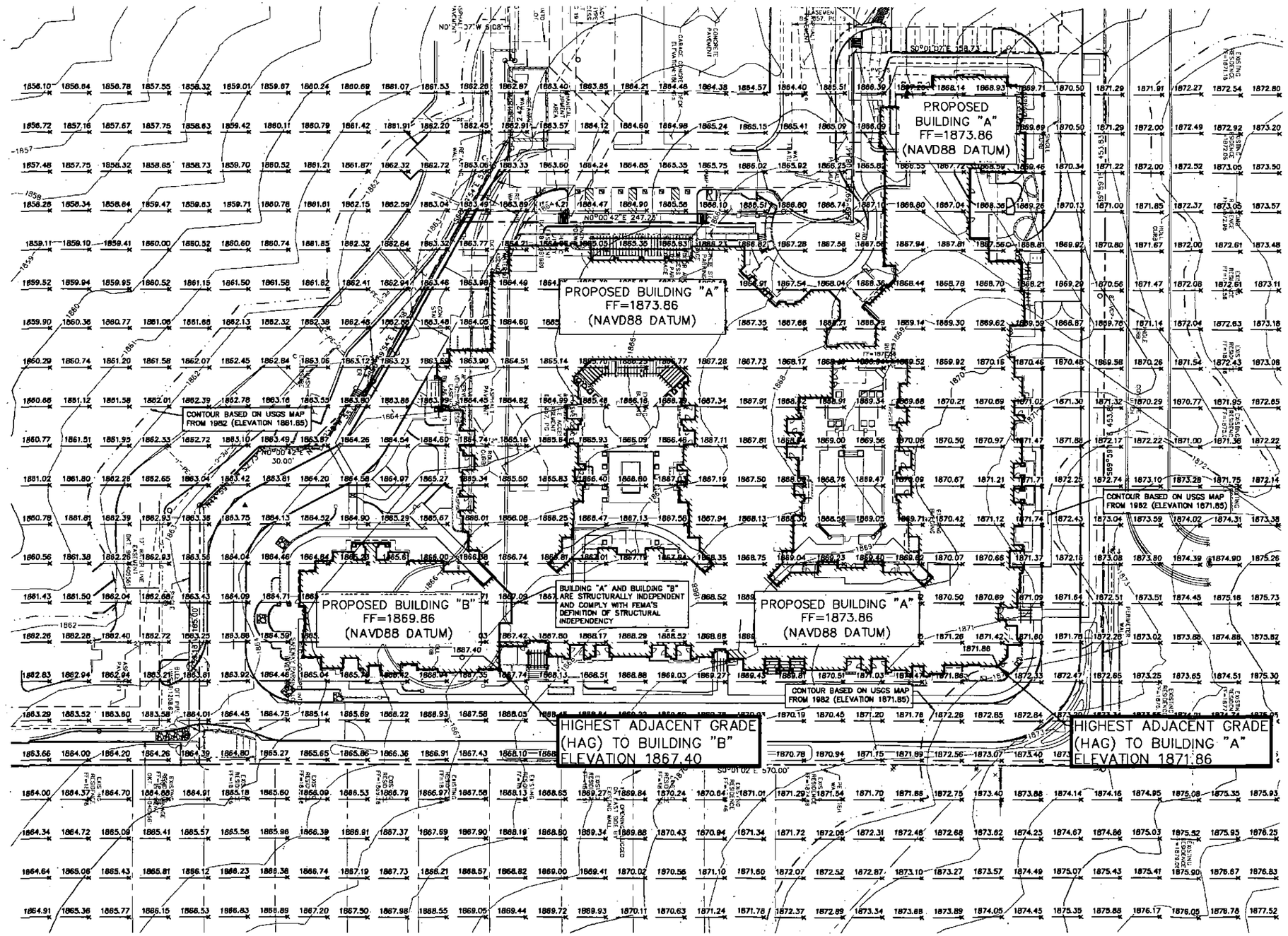
US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910

Attachment No. 13



LEGEND

- PROPERTY LINE
- XXXX.XX — INTERPOLATED SPOT ELEVATION
- 1870 — TOPOGRAPHIC CONTOURS
- BUILDING PERIMETER

SCALE

1" = 30 ft

REGULATORY FLOOD ELEVATION (RFE)

RFE BUILDING A = HAG + 2FT = 1873.86
RFE BUILDING B = HAG + 2FT = 1869.40

NOTE

TOPOGRAPHY PRESENTED IN THIS EXHIBIT IS BASED ON USGS MAPPING DATED 1982 AND CONVERTED TO NAVD88 WITH CONVERSION FACTOR OF 1.85 FT.

REV.
REV.
REV.
REV.
REV.

Site Consultants, Inc.
ENGINEERS • SURVEYORS • CONSULTANTS
a division of **Westwood**
6909 East Greenway Parkway, Suite 250, Scottsdale, AZ 85254
westwoodps.com (888) 937-5150

PRE-DISTURBANCE TOPOGRAPHY MAP

USGS SURVEY ELEVATIONS
SENIOR LIVING
SCOTTSDALE, ARIZONA

PROJECT NO.:	2098
SCALE:	1" = 30'
DRAWN BY:	WLC
CHECKED BY:	MJC
DATE:	9-08-2016
DWG:	2098-C-EXH-USGS.dwg

Attachment No. 14

Weir Report

WEIR CALCULATION FOR 2-4IN WALL OPENINGS

Rectangular Weir

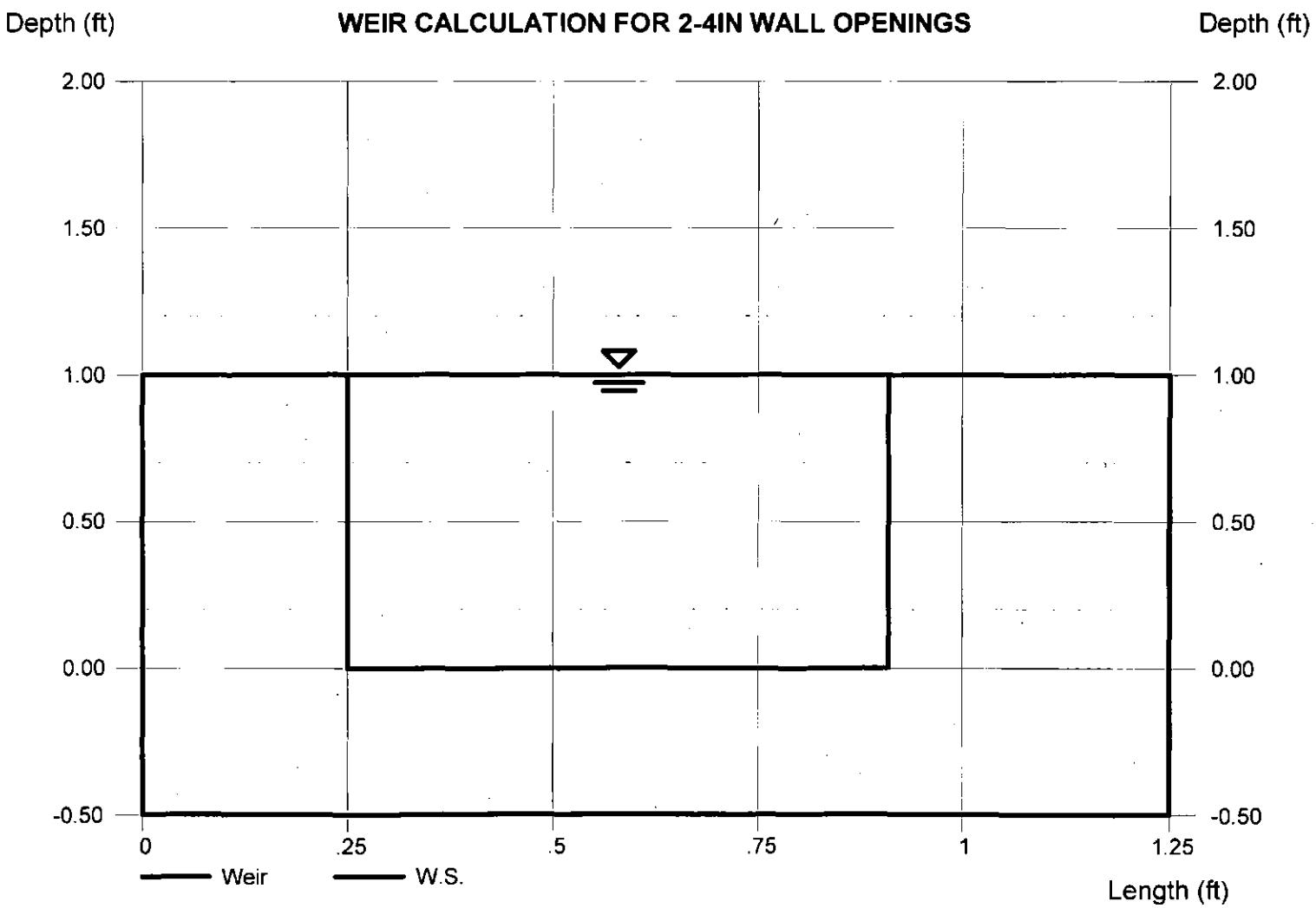
Crest	= Sharp
Bottom Length (ft)	= 0.66
Total Depth (ft)	= 1.00

Calculations

Weir Coeff. Cw	= 3.33
Compute by:	Known Depth
Known Depth (ft)	= 1.00

Highlighted

Depth (ft)	= 1.00
Q (cfs)	= 2.198
Area (sqft)	= 0.66
Velocity (ft/s)	= 3.33
Top Width (ft)	= 0.66



Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Wednesday, Sep 7 2016

SECTION A-A

User-defined

Invert Elev (ft)	= 71.50
Slope (%)	= 2.00
N-Value	= 0.013

Calculations

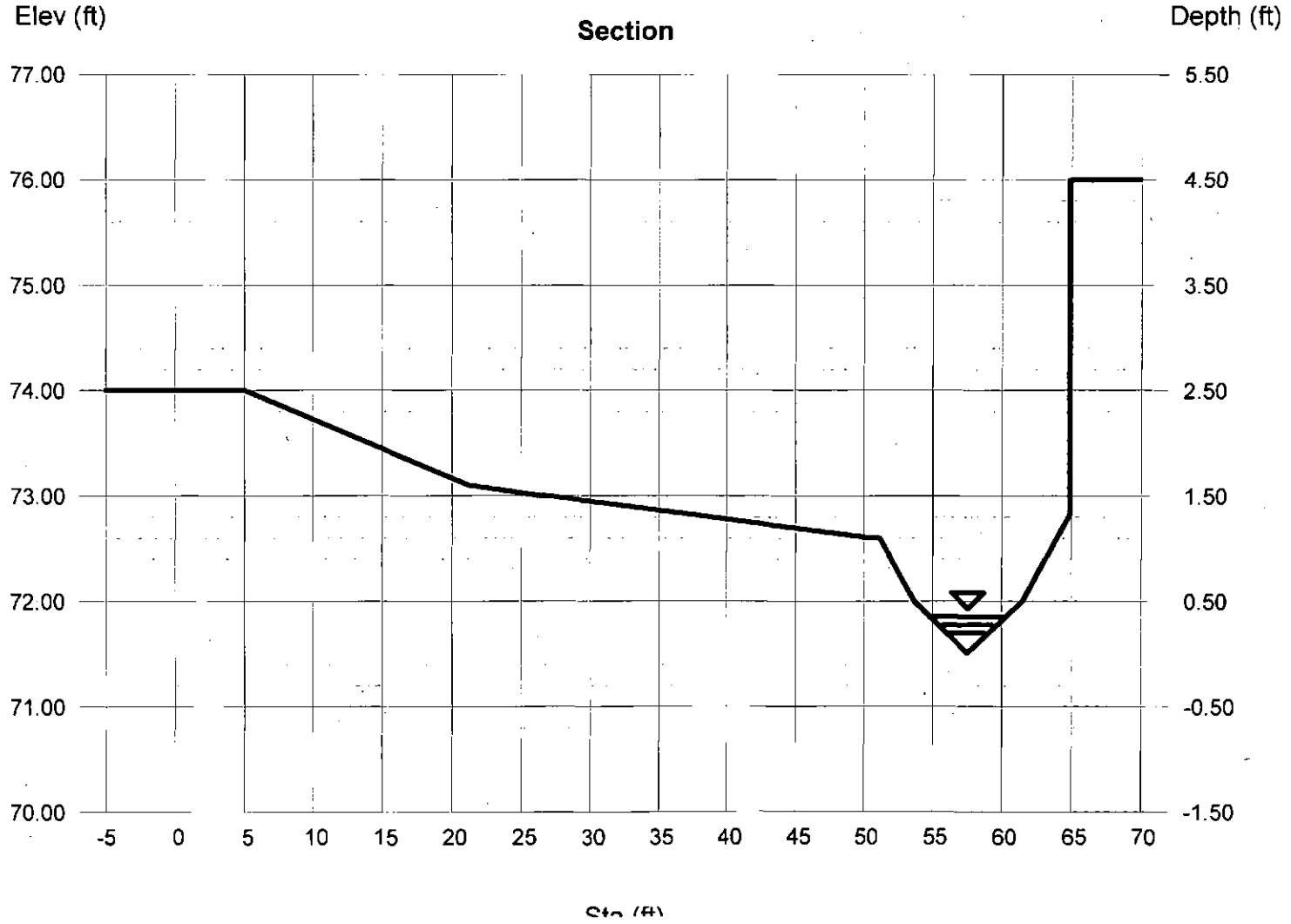
Compute by:	Known Q
Known Q (cfs)	= 4.76

Highlighted

Depth (ft)	= 0.35
Q (cfs)	= 4.760
Area (sqft)	= 0.97
Velocity (ft/s)	= 4.93
Wetted Perim (ft)	= 5.56
Crit Depth, Yc (ft)	= 0.47
Top Width (ft)	= 5.52
EGL (ft)	= 0.73

(Sta, El, n)-(Sta, El, n)...

(0.00, 74.00) -(5.00, 74.00, 0.013) -(21.17, 73.10, 0.013) -(26.17, 73.00, 0.013) -(26.67, 73.00, 0.013) -(26.68, 73.00, 0.013) -(50.68, 72.60, 0.013) -(51.18, 72.60, 0.013) -(53.68, 72.00, 0.013) -(57.52, 71.50, 0.013) -(61.56, 72.00, 0.013) -(64.88, 72.82, 0.013) -(64.90, 76.00, 0.013)



Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Wednesday, Sep 7 2016

SECTION B-B

User-defined

Invert Elev (ft)	= 68.50
Slope (%)	= 2.00
N-Value	= 0.013

Calculations

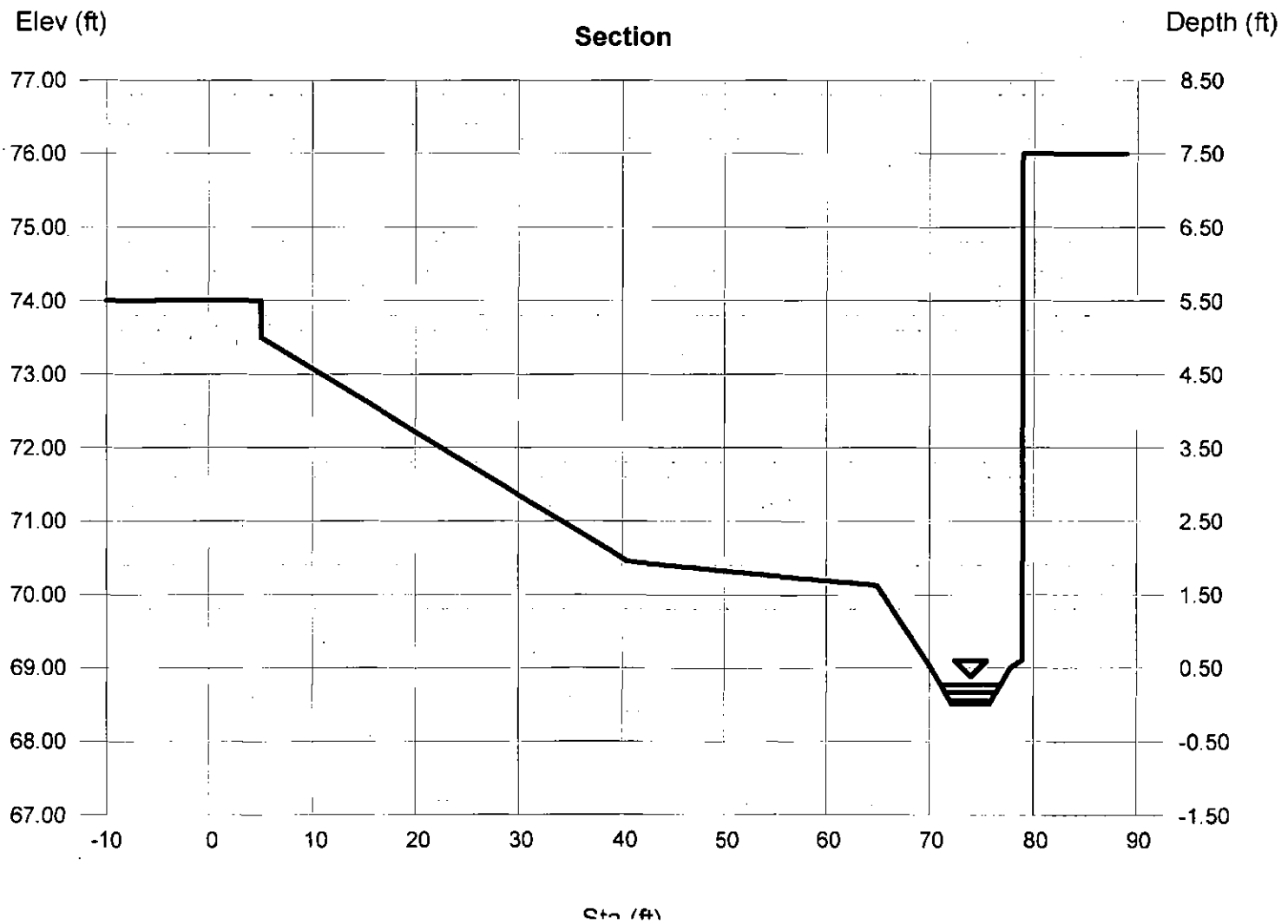
Compute by:	Known Q
Known Q (cfs)	= 7.01

Highlighted

Depth (ft)	= 0.27
Q (cfs)	= 7.010
Area (sqft)	= 1.26
Velocity (ft/s)	= 5.55
Wetted Perim (ft)	= 5.83
Crit Depth, Yc (ft)	= 0.42
Top Width (ft)	= 5.76
EGL (ft)	= 0.75

(Sta, El, n)-(Sta, El, n)...

(0.00, 74.00) -(5.00, 74.00, 0.013) -(5.01, 73.50, 0.013) -(40.48, 70.45, 0.013) -(64.98, 70.12, 0.013) -(70.20, 69.00, 0.013) -(72.20, 68.50, 0.013) -(75.80, 68.50, 0.013) -(77.80, 69.00, 0.013) -(78.98, 69.10, 0.013) -(78.99, 76.00, 0.013)



Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Thursday, Sep 8 2016

SECTION C-C

User-defined

Invert Elev (ft)	= 66.32
Slope (%)	= 2.00
N-Value	= 0.013

Calculations

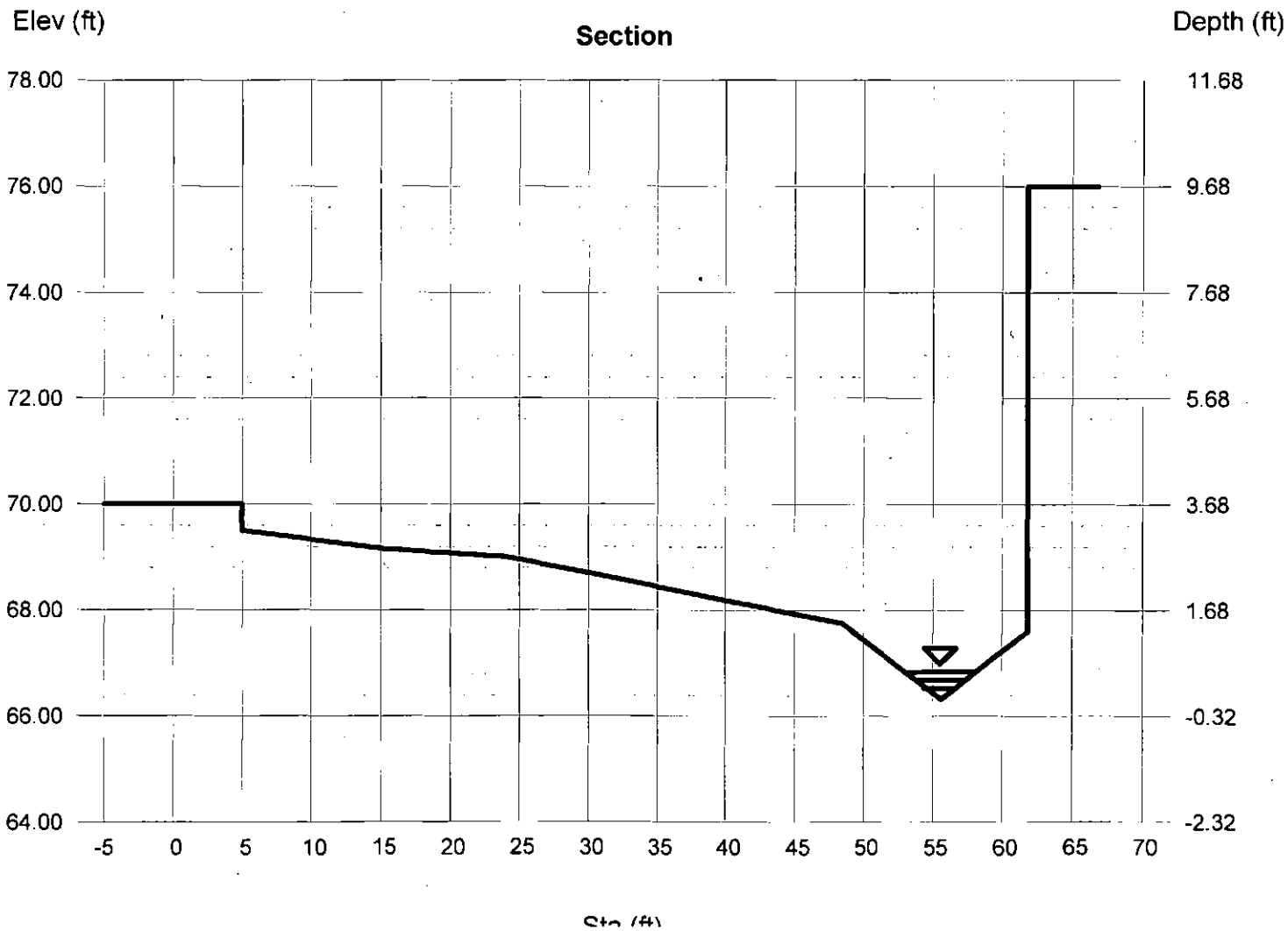
Compute by:	Known Q
Known Q (cfs)	= 7.82

Highlighted

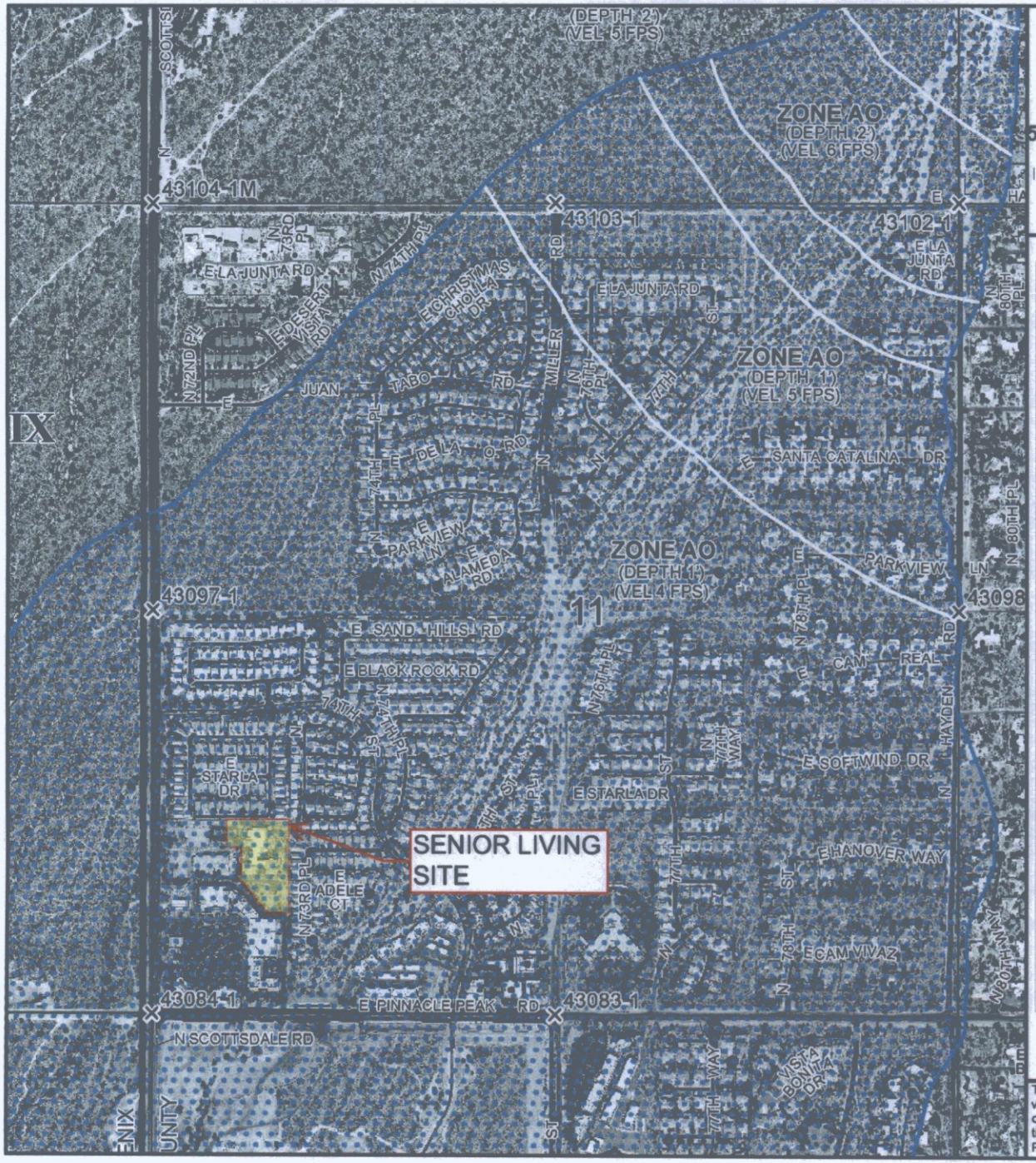
Depth (ft)	= 0.51
Q (cfs)	= 7.820
Area (sqft)	= 1.28
Velocity (ft/s)	= 6.11
Wetted Perim (ft)	= 5.12
Crit Depth, Yc (ft)	= 0.70
Top Width (ft)	= 5.02
EGL (ft)	= 1.09

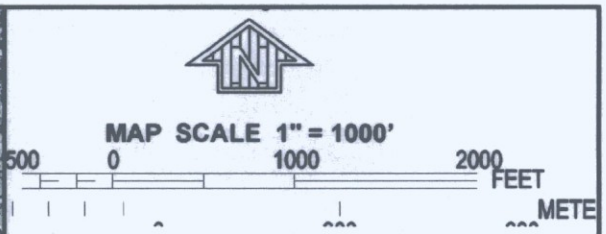
(Sta, El, n)-(Sta, El, n)...

(0.00, 70.00) -(5.00, 70.00, 0.013) -(5.01, 69.50, 0.013) -(15.27, 69.16, 0.013) -(23.97, 69.00, 0.013) -(48.47, 67.75, 0.013) -(55.62, 66.32, 0.013) -(61.82, 67.60, 0.013) -(61.83, 76.00, 0.013)



Attachment No. 15





NFIP

PANEL 1310L

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA

AND INCORPORATED AREAS

PANEL 1310 OF 4425

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MARICOPA COUNTY	040037	1310	L
PHOENIX, CITY OF	040051	1310	L
SCOTTSDALE, CITY OF	045012	1310	L

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
04013C1310L

MAP REVISED
OCTOBER 16, 2013

Federal Emergency Management Agency

Attachment No. 16

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)							Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	Rational	-----	------	0.815	-------	------	1.368	-------	------	2.158	Pinicle Peak Villa
2	Reservoir	1	------	1.460	-------	-------	1.460	-------	-------	1.819	<no description>

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

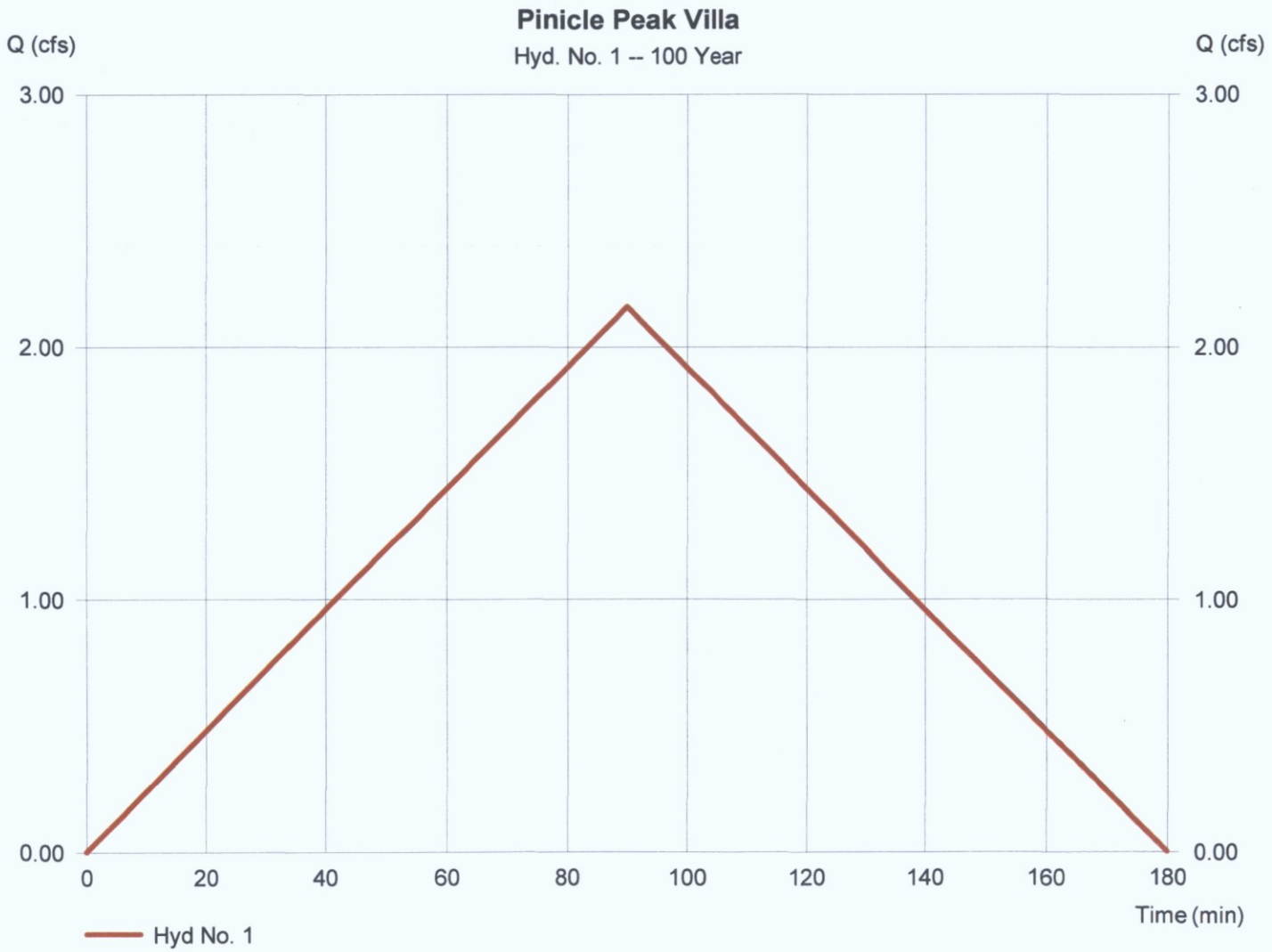
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	2.158	1	90	11,653	------	------	------	Pinicle Peak Villa
2	Reservoir	1.819	1	104	253,230	1	1862.24	817	<no description>

Hydrograph Report

Hyd. No. 1

Pinicle Peak Villa

Hydrograph type	= Rational	Peak discharge	= 2.158 cfs
Storm frequency	= 100 yrs	Time to peak	= 90 min
Time interval	= 1 min	Hyd. volume	= 11,653 cuft
Drainage area	= 2.180 ac	Runoff coeff.	= 0.68
Intensity	= 1.456 in/hr	Tc by User	= 90.00 min
IDF Curve	= Maricopa County Arizona.IDF	Asc/Rec limb fact	= 1/1



Hydraflow Rainfall Report

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	-------
2	74.6612	22.1000	1.0407	-------
3	0.0000	0.0000	0.0000	-------
5	37.1350	9.2000	0.8438	-------
10	43.6753	8.9000	0.8396	-------
25	56.0412	9.2000	0.8499	-------
50	65.7513	9.4000	0.8553	-------
100	67.7162	8.8000	0.8360	-------

File name: Maricopa County Arizona.IDF

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2.41	2.02	1.74	1.52	1.36	1.22	1.11	1.02	0.94	0.87	0.81	0.76
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	3.96	3.07	2.52	2.15	1.89	1.68	1.52	1.39	1.28	1.19	1.11	1.04
10	4.79	3.70	3.04	2.59	2.27	2.02	1.82	1.67	1.54	1.43	1.33	1.25
25	5.88	4.55	3.74	3.19	2.78	2.48	2.24	2.04	1.88	1.75	1.63	1.53
50	6.72	5.21	4.28	3.65	3.19	2.84	2.56	2.34	2.16	2.00	1.87	1.75
100	7.55	5.83	4.78	4.08	3.57	3.18	2.87	2.63	2.42	2.25	2.10	1.97

Tc = time in minutes. Values may exceed 60.

Precip. file name: Sample.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	0.00	2.20	0.00	3.30	4.25	5.77	6.80	7.95
SCS 6-Hr	0.00	1.80	0.00	0.00	2.60	0.00	0.00	4.00
Huff-1st	0.00	1.55	0.00	2.75	4.00	5.38	6.50	8.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	1.75	0.00	2.80	3.90	5.25	6.00	7.10

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)							Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	Rational	------	-------	6.028	-------	-------	11.99	-------	-------	18.89	DA-2
2	Reservoir	1	-------	0.000	-------	-------	0.000	-------	-------	0.000	<no description>

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	18.89	1	5	5,666	------	------	------	DA-2
2	Reservoir	0.000	1	n/a	0	1	0.00	0.000	<no description>

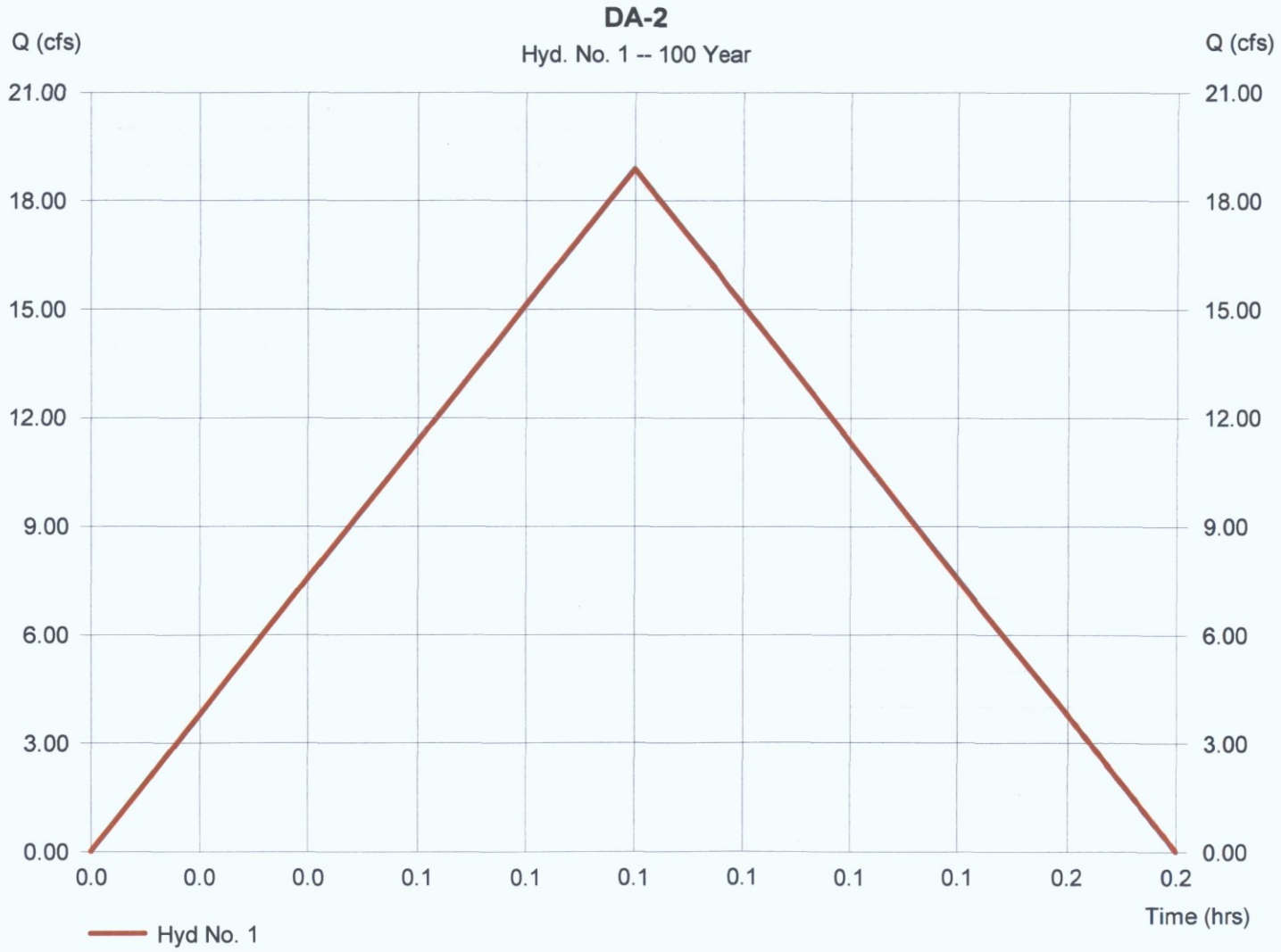
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3 Thursday, 09 / 15 / 2016

Hyd. No. 1

DA-2

Hydrograph type	= Rational	Peak discharge	= 18.89 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.08 hrs
Time interval	= 1 min	Hyd. volume	= 5,666 cuft
Drainage area	= 3.250 ac	Runoff coeff.	= 0.77
Intensity	= 7.547 in/hr	Tc by User	= 5.00 min
IDF Curve	= Maricopa County Arizona.IDF	Asc/Rec limb fact	= 1/1



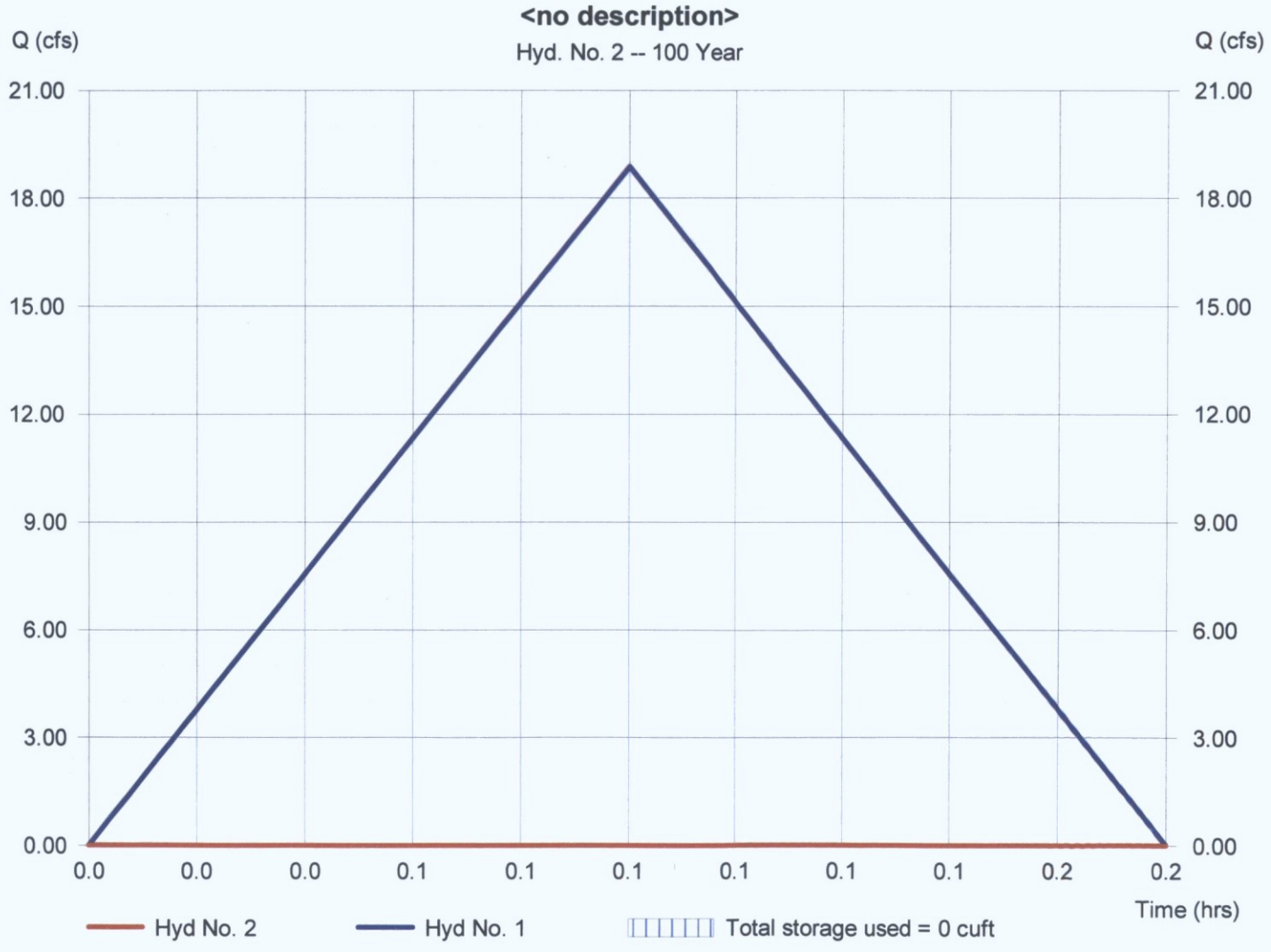
Hydrograph Report

Hyd. No. 2

<no description>

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 100 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 1 - DA-2	Max. Elevation	= 0.00 ft
Reservoir name	= <New Pond>	Max. Storage	= 0 cuft

Storage Indication method used. Wet pond routing start elevation = 1860.80 ft.



Pond No. 1 - <New Pond>

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 1860.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1860.00	320	0	0
0.80	1860.80	340	264	264
1.00	1861.00	360	70	334
2.00	1862.00	405	382	716
3.00	1863.00	440	422	1,138

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 6.00	Inactive	0.00	0.00
Span (in)	= 6.00	6.00	0.00	0.00
No. Barrels	= 1	1	0	1
Invert El. (ft)	= 1857.50	1857.75	0.00	0.00
Length (ft)	= 23.00	0.00	0.00	0.00
Slope (%)	= 0.65	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 11.67	0.00	0.00	0.00
Crest El. (ft)	= 1860.80	0.00	0.00	0.00
Weir Coeff.	= 3.00	3.33	3.33	3.33
Weir Type	= 1	---	---	---
Multi-Stage	= Yes	Yes	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. *Weir risers checked for orifice conditions (ic) and submergence (s).*

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	1860.00	0.00	0.00	---	---	0.00	---	---	---	---	---	0.000
0.08	26	1860.08	1.30 oc	0.00	---	---	0.00	---	---	---	---	---	1.297
0.16	53	1860.16	1.32 oc	0.00	---	---	0.00	---	---	---	---	---	1.320
0.24	79	1860.24	1.34 oc	0.00	---	---	0.00	---	---	---	---	---	1.342
0.32	106	1860.32	1.36 oc	0.00	---	---	0.00	---	---	---	---	---	1.365
0.40	132	1860.40	1.39 oc	0.00	---	---	0.00	---	---	---	---	---	1.387
0.48	158	1860.48	1.41 oc	0.00	---	---	0.00	---	---	---	---	---	1.408
0.56	185	1860.56	1.43 oc	0.00	---	---	0.00	---	---	---	---	---	1.429
0.64	211	1860.64	1.45 oc	0.00	---	---	0.00	---	---	---	---	---	1.450
0.72	238	1860.72	1.47 oc	0.00	---	---	0.00	---	---	---	---	---	1.471
0.80	264	1860.80	1.49 oc	0.00	---	---	0.00	---	---	---	---	---	1.491
0.82	271	1860.82	1.50 oc	0.00	---	---	0.00	---	---	---	---	---	1.496
0.84	278	1860.84	1.50 oc	0.00	---	---	0.00	---	---	---	---	---	1.501
0.86	285	1860.86	1.51 oc	0.00	---	---	0.00	---	---	---	---	---	1.507
0.88	292	1860.88	1.51 oc	0.00	---	---	0.00	---	---	---	---	---	1.512
0.90	299	1860.90	1.52 oc	0.00	---	---	0.00	---	---	---	---	---	1.517
0.92	306	1860.92	1.52 oc	0.00	---	---	0.00	---	---	---	---	---	1.521
0.94	313	1860.94	1.53 oc	0.00	---	---	0.00	---	---	---	---	---	1.526
0.96	320	1860.96	1.53 oc	0.00	---	---	0.00	---	---	---	---	---	1.531
0.98	327	1860.98	1.54 oc	0.00	---	---	0.00	---	---	---	---	---	1.536
1.00	334	1861.00	1.54 oc	0.00	---	---	0.00	---	---	---	---	---	1.541
1.10	372	1861.10	1.57 oc	0.00	---	---	0.00	---	---	---	---	---	1.565
1.20	410	1861.20	1.59 oc	0.00	---	---	0.00	---	---	---	---	---	1.589
1.30	449	1861.30	1.61 oc	0.00	---	---	0.00	---	---	---	---	---	1.613
1.40	487	1861.40	1.64 oc	0.00	---	---	0.00	---	---	---	---	---	1.636
1.50	525	1861.50	1.66 oc	0.00	---	---	0.00	---	---	---	---	---	1.659
1.60	563	1861.60	1.68 oc	0.00	---	---	0.00	---	---	---	---	---	1.682
1.70	601	1861.70	1.70 oc	0.00	---	---	0.00	---	---	---	---	---	1.704
1.80	640	1861.80	1.73 oc	0.00	---	---	0.00	---	---	---	---	---	1.726
1.90	678	1861.90	1.75 oc	0.00	---	---	0.00	---	---	---	---	---	1.748
2.00	716	1862.00	1.77 oc	0.00	---	---	0.00	---	---	---	---	---	1.769
2.10	758	1862.10	1.79 oc	0.00	---	---	0.00	---	---	---	---	---	1.790
2.20	801	1862.20	1.81 oc	0.00	---	---	0.00	---	---	---	---	---	1.811
2.30	843	1862.30	1.83 oc	0.00	---	---	0.00	---	---	---	---	---	1.832
2.40	885	1862.40	1.85 oc	0.00	---	---	0.00	---	---	---	---	---	1.852
2.50	927	1862.50	1.87 oc	0.00	---	---	0.00	---	---	---	---	---	1.873
2.60	970	1862.60	1.89 oc	0.00	---	---	0.00	---	---	---	---	---	1.893
2.70	1,012	1862.70	1.91 oc	0.00	---	---	0.00	---	---	---	---	---	1.912

Continues on next page...

<New Pond>

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
2.80	1,054	1862.80	1.93 oc	0.00	---	---	0.00	---	---	---	---	---	1.932
2.90	1,096	1862.90	1.95 oc	0.00	---	---	0.00	---	---	---	---	---	1.951
3.00	1,138	1863.00	1.97 oc	0.00	---	---	0.00	---	---	---	---	---	1.971

...End

Hydraflow Rainfall Report

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	-------
2	74.6612	22.1000	1.0407	-------
3	0.0000	0.0000	0.0000	-------
5	37.1350	9.2000	0.8438	-------
10	43.6753	8.9000	0.8396	-------
25	56.0412	9.2000	0.8499	-------
50	65.7513	9.4000	0.8553	-------
100	67.7162	8.8000	0.8360	-------

File name: Maricopa County Arizona.IDF

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2.41	2.02	1.74	1.52	1.36	1.22	1.11	1.02	0.94	0.87	0.81	0.76
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	3.96	3.07	2.52	2.15	1.89	1.68	1.52	1.39	1.28	1.19	1.11	1.04
10	4.79	3.70	3.04	2.59	2.27	2.02	1.82	1.67	1.54	1.43	1.33	1.25
25	5.88	4.55	3.74	3.19	2.78	2.48	2.24	2.04	1.88	1.75	1.63	1.53
50	6.72	5.21	4.28	3.65	3.19	2.84	2.56	2.34	2.16	2.00	1.87	1.75
100	7.55	5.83	4.78	4.08	3.57	3.18	2.87	2.63	2.42	2.25	2.10	1.97

Tc = time in minutes. Values may exceed 60.

Precip. file name: Sample.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	0.00	2.20	0.00	3.30	4.25	5.77	6.80	7.95
SCS 6-Hr	0.00	1.80	0.00	0.00	2.60	0.00	0.00	4.00
Huff-1st	0.00	1.55	0.00	2.75	4.00	5.38	6.50	8.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	1.75	0.00	2.80	3.90	5.25	6.00	7.10

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)							Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	Rational	------	-------	4.734	-------	-------	9.419	-------	-------	14.83	<no description>
2	Reservoir	1	-------	0.000	-------	-------	0.000	-------	-------	0.000	<no description>

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	14.83	1	5	4,449	------	------	------	<no description>
2	Reservoir	0.000	1	n/a	0	1	0.00	0.000	<no description>

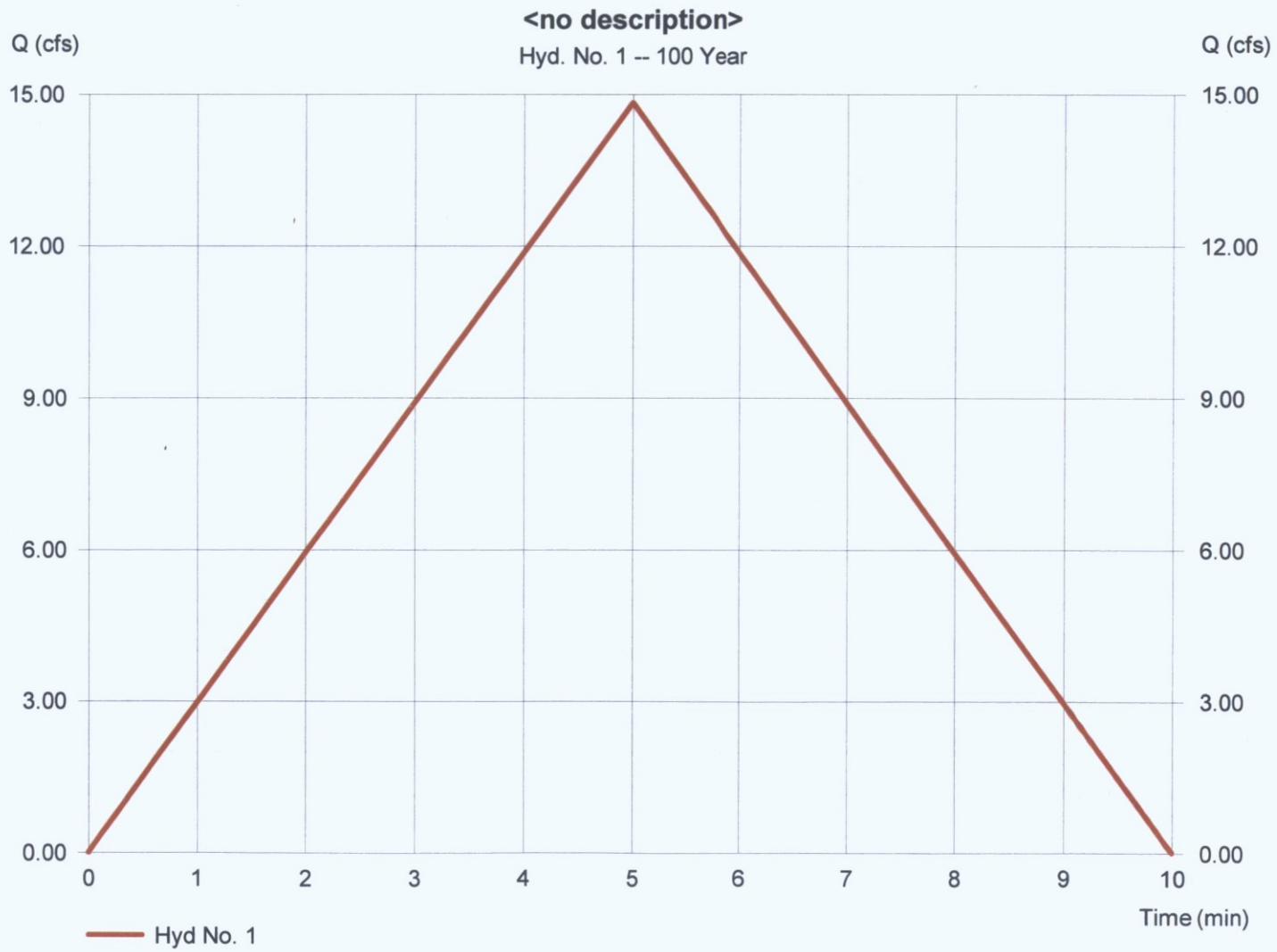
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3 Thursday, 09 / 15 / 2016

Hyd. No. 1

<no description>

Hydrograph type	= Rational	Peak discharge	= 14.83 cfs
Storm frequency	= 100 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 4,449 cuft
Drainage area	= 2.890 ac	Runoff coeff.	= 0.68
Intensity	= 7.547 in/hr	Tc by User	= 5.00 min
IDF Curve	= Maricopa County Arizona.IDF	Asc/Rec limb fact	= 1/1



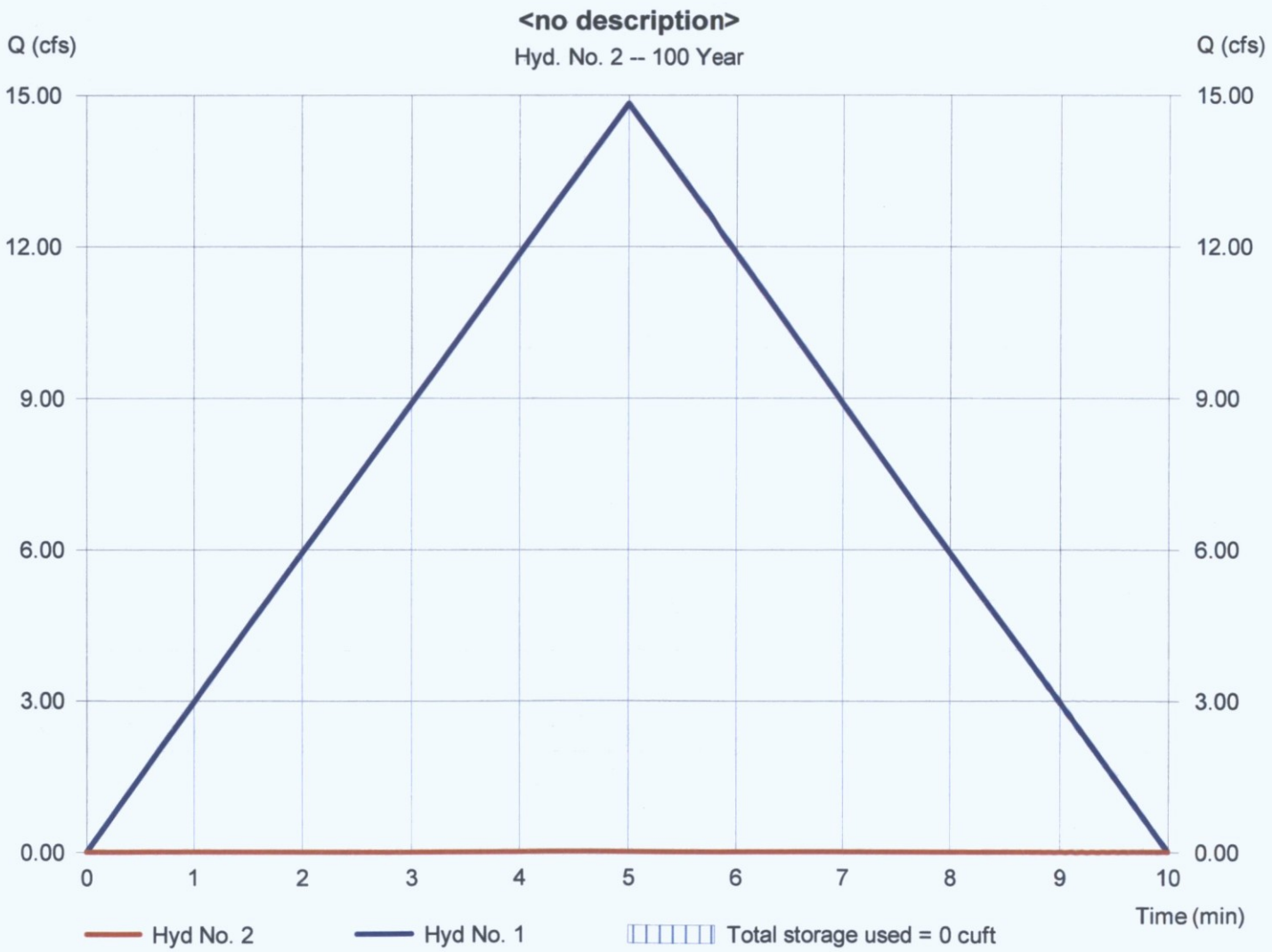
Hydrograph Report

Hyd. No. 2

<no description>

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 100 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 1 - <no description>	Max. Elevation	= 0.00 ft
Reservoir name	= <New Pond>	Max. Storage	= 0 cuft

Storage Indication method used. Wet pond routing start elevation = 1864.00 ft.



Pond Report

Pond No. 1 - <New Pond>

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 1863.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1863.00	1,200	0	0
1.00	1864.00	1,500	1,347	1,347
1.50	1865.00	1,600	775	2,122

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 10.00	0.00	0.00	0.00
Span (in)	= 10.00	0.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 1863.70	0.00	0.00	0.00
Length (ft)	= 36.00	0.00	0.00	0.00
Slope (%)	= 14.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	Inactive	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	1863.00	0.00	---	---	---	---	---	---	---	---	---	0.000
0.10	135	1863.10	0.00	---	---	---	---	---	---	---	---	---	0.000
0.20	269	1863.20	0.00	---	---	---	---	---	---	---	---	---	0.000
0.30	404	1863.30	0.00	---	---	---	---	---	---	---	---	---	0.000
0.40	539	1863.40	0.00	---	---	---	---	---	---	---	---	---	0.000
0.50	674	1863.50	0.00	---	---	---	---	---	---	---	---	---	0.000
0.60	808	1863.60	0.00	---	---	---	---	---	---	---	---	---	0.000
0.70	943	1863.70	0.00	---	---	---	---	---	---	---	---	---	0.000
0.80	1,078	1863.80	0.04 ic	---	---	---	---	---	---	---	---	---	0.040
0.90	1,212	1863.90	0.15 ic	---	---	---	---	---	---	---	---	---	0.153
1.00	1,347	1864.00	0.33 ic	---	---	---	---	---	---	---	---	---	0.330
1.05	1,425	1864.05	0.44 ic	---	---	---	---	---	---	---	---	---	0.438
1.10	1,502	1864.10	0.56 ic	---	---	---	---	---	---	---	---	---	0.558
1.15	1,580	1864.15	0.69 ic	---	---	---	---	---	---	---	---	---	0.688
1.20	1,657	1864.20	0.82 ic	---	---	---	---	---	---	---	---	---	0.824
1.25	1,734	1864.25	0.97 ic	---	---	---	---	---	---	---	---	---	0.965
1.30	1,812	1864.30	1.11 ic	---	---	---	---	---	---	---	---	---	1.110
1.35	1,889	1864.35	1.25 ic	---	---	---	---	---	---	---	---	---	1.254
1.40	1,967	1864.40	1.39 ic	---	---	---	---	---	---	---	---	---	1.394
1.45	2,044	1864.45	1.52 ic	---	---	---	---	---	---	---	---	---	1.525
1.50	2,122	1865.00	2.47 ic	---	---	---	---	---	---	---	---	---	2.468

Attachment No. 17

LEGAL DESCRIPTION

PARCEL NO. 1
LOT 2, MINOR LAND DIVISION OF CROWN WEST PLAT, A DIVISION LAND MAP RECORDED IN BOOK 1259 OF MAPS, 28, RECORDS OF MARICOPA COUNTY, ARIZONA.

PARCEL NO. 2
EASEMENTS FOR ACCESS AND PARKING AS SET FORTH IN DECLARATION OF ESTABLISHMENT OF RESTRICTIONS AND GRANTS OF EASEMENTS RECORDED AS 89-265868 OF OFFICIAL RECORDS, SECOND AMENDMENT TO DECLARATION OF ESTABLISHMENT OF RESTRICTIONS AND GRANTS OF EASEMENTS RECORDED AS 2016-0100028 OF OFFICIAL RECORDS; AND AMENDED AND RESTATED DECLARATION OF CROSS EASEMENTS AND PARKING RECORDED AS 2007-251301 OF OFFICIAL RECORDS; AND FIRST AMENDMENT TO AMENDED AND RESTATED DECLARATION OF CROSS EASEMENTS AND PARKING RECORDED AS 2016-0100025 OF OFFICIAL RECORDS.

BENCHMARK

CITY OF SCOTTSDALE BRASS CAP IN HANDHOLE LOCATED AT THE INTERSECTION OF SCOTTSDALE ROAD & ALAMEDA DRIVE; ELEVATION = 1887.415 NAVD88 DATUM.

BENCHMARK CERTIFICATION STATEMENT

I HEREBY CERTIFY THAT ALL ELEVATIONS REPRESENTED ON THIS PLAN ARE BASED ON THE ELEVATION DATUM FOR THE CITY OF SCOTTSDALE BENCHMARK PROVIDED ABOVE.

LEGEND

	PROPERTY LINE	C.O.S.	CITY OF SCOTTSDALE
	RIGHT OF WAY LINE	R.O.W.	RIGHT OF WAY
	CENTER LINE	M.C.R.	MARICOPA COUNTY RECORDER OFFICE
	EASEMENT LINE	D.E.	DRAINAGE EASEMENT
1180	CONTOUR LINE	W.L.E.	WATERLINE EASEMENT
UGW	UNDERGROUND UTILITY	C.A.E.	CROSS ACCESS EASEMENT
	EDGE OF PAVEMENT	TC	TOP CURB ELEVATION
E	UNDERGROUND ELECTRIC	G	GUTTER ELEVATION
E CAB	ELECTRIC CABINET	P	PAVEMENT ELEVATION
E.J.B.	ELECTRIC J-BOX	C	CONCRETE ELEVATION
E.T.	ELECTRIC TRANSFORMER	NG	NATURAL GROUND
E.V.L.T.	ELECTRIC VAULT	INV	INVERT
OHE	OVERHEAD ELECTRIC	TB	TOP BANK
S	UNDERGROUND SEWER	BB	BOTTOM BANK
	SEWER MANHOLE	TW	TOP WALL
D	UNDERGROUND STORM DRAIN	GB	GRADE BREAK
R.D.	ROOF DRAIN		
T	UNDERGROUND TELEPHONE		
W	UNDERGROUND WATER		
W.V.	WATER VALVE		
F.H.	FIRE HYDRANT		

NO CONFLICT SIGNATURE BLOCK				
UTILITY	UTILITY COMPANY	NAME OF COMPANY REPRESENTATIVE	TELEPHONE NUMBER	DATE SIGNED
ELECTRIC	ARIZONA PUBLIC SERVICE	CONFLICT REVIEWER	602-493-4460	
TELEPHONE	CENTURY LINK	CONFLICT REVIEWER	480-768-4567	
NATURAL GAS	SOUTHWEST GAS	CONFLICT REVIEWER	480-730-3843	
CABLE TV	COX COMMUNICATIONS	CONFLICT REVIEWER	602-328-3535	
OTHER				
OTHER				

ENGINEER'S CERTIFICATION

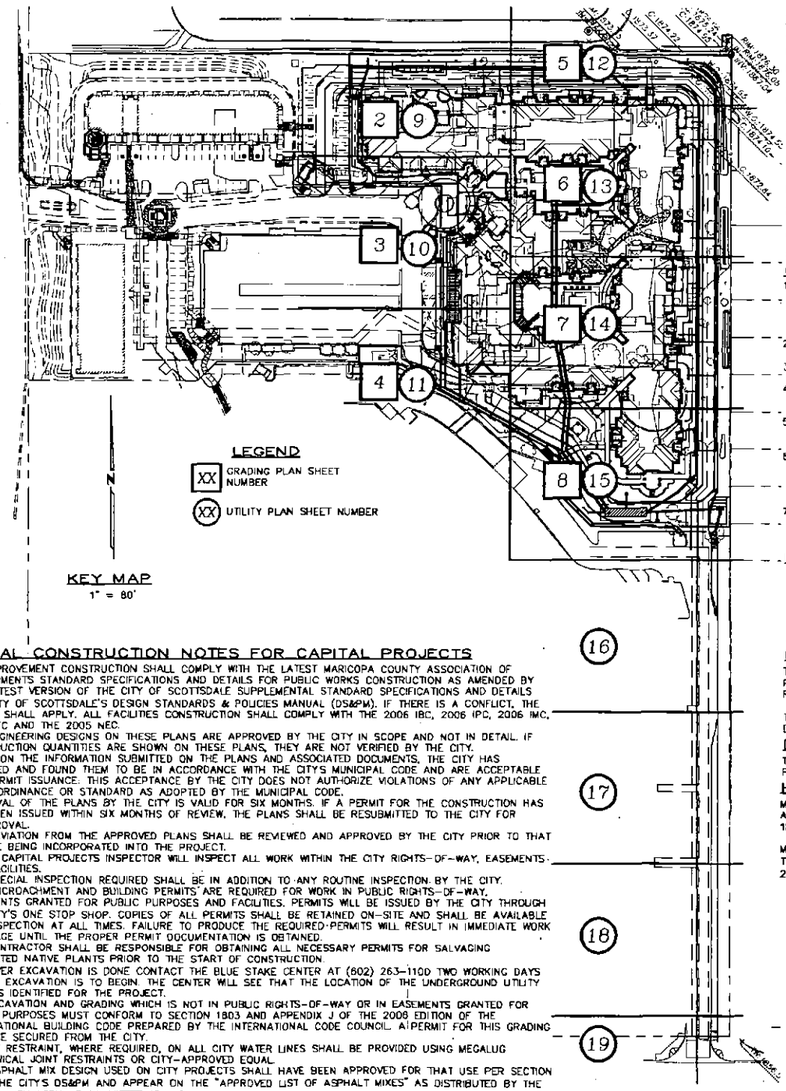
I MICHAEL J. CAYLOR, AS THE ENGINEER OF RECORD FOR THIS DEVELOPMENT, HEREBY CERTIFY THAT ALL UTILITY COMPANIES LISTED ABOVE HAVE BEEN PROVIDED FINAL IMPROVEMENT PLANS FOR REVIEW, AND THAT ALL CONFLICTS IDENTIFIED BY THE UTILITIES HAVE BEEN RESOLVED. IN ADDITION, "NO CONFLICT" FORMS HAVE BEEN OBTAINED FROM EACH UTILITY COMPANY AND ARE INCLUDED IN THIS SUBMITTAL.

SIGNATURE _____ DATE _____

PRELIMINARY CIVIL IMPROVEMENT PLANS

SENIOR LIVING

BEING A PORTION OF THE SOUTHWEST QUARTER OF SECTION 11, TOWNSHIP 4 NORTH, RANGE 4 EAST, OF THE GILA & SALT RIVER BASE & MERIDIAN, MARICOPA COUNTY, ARIZONA



GENERAL CONSTRUCTION NOTES FOR CAPITAL PROJECTS

1. ALL IMPROVEMENT CONSTRUCTION SHALL COMPLY WITH THE LATEST MARICOPA COUNTY ASSOCIATION OF GOVERNMENTS STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION AS AMENDED BY THE LATEST VERSION OF THE CITY OF SCOTTSDALE SUPPLEMENTAL STANDARD SPECIFICATIONS AND DETAILS AND CITY OF SCOTTSDALE'S DESIGN STANDARDS & POLICIES MANUAL (DS&PM). IF THERE IS A CONFLICT, THE LATTER SHALL APPLY. ALL FACILITIES CONSTRUCTION SHALL COMPLY WITH THE 2006 IBC, 2006 IPC, 2006 IMC, 2006 IFC AND THE 2005 NEC.
2. THE ENGINEERING DESIGNS ON THESE PLANS ARE APPROVED BY THE CITY IN SCOPE AND NOT IN DETAIL. IF CONSTRUCTION QUANTITIES ARE SHOWN ON THESE PLANS, THEY ARE NOT VERIFIED BY THE CITY.
3. BASED ON THE INFORMATION SUBMITTED ON THE PLANS AND ASSOCIATED DOCUMENTS, THE CITY HAS REVIEWED AND FOUND THEM TO BE IN ACCORDANCE WITH THE CITY'S MUNICIPAL CODE AND ARE ACCEPTABLE FOR PERMIT ISSUANCE. THIS ACCEPTANCE BY THE CITY DOES NOT AUTHORIZE VIOLATIONS OF ANY APPLICABLE CODE, ORDINANCE OR STANDARD AS ADOPTED BY THE MUNICIPAL CODE.
4. APPROVAL OF THE PLANS BY THE CITY IS VALID FOR SIX MONTHS. IF A PERMIT FOR THE CONSTRUCTION HAS NOT BEEN ISSUED WITHIN SIX MONTHS OF REVIEW, THE PLANS SHALL BE RESUBMITTED TO THE CITY FOR REAPPROVAL.
5. ANY DEVIATION FROM THE APPROVED PLANS SHALL BE REVIEWED AND APPROVED BY THE CITY PRIOR TO THAT CHANGE BEING INCORPORATED INTO THE PROJECT.
6. A CITY CAPITAL PROJECTS INSPECTOR WILL INSPECT ALL WORK WITHIN THE CITY RIGHTS-OF-WAY, EASEMENTS AND FACILITIES.
7. ANY SPECIAL INSPECTION REQUIRED SHALL BE IN ADDITION TO ANY ROUTINE INSPECTION BY THE CITY.
8. CITY ENCROACHMENT AND BUILDING PERMITS ARE REQUIRED FOR WORK IN PUBLIC RIGHTS-OF-WAY, EASEMENTS GRANTED FOR PUBLIC PURPOSES AND FACILITIES. PERMITS WILL BE ISSUED BY THE CITY THROUGH THE CITY'S ONE STOP SHOP. COPIES OF ALL PERMITS SHALL BE RETAINED ON-SITE AND SHALL BE AVAILABLE FOR INSPECTION AT ALL TIMES. FAILURE TO PRODUCE THE REQUIRED PERMITS WILL RESULT IN IMMEDIATE WORK STOPPAGE UNTIL THE PROPER PERMIT DOCUMENTATION IS OBTAINED.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR SALVAGING PROTECTED NATIVE PLANTS PRIOR TO THE START OF CONSTRUCTION.
10. WHEREVER EXCAVATION IS DONE CONTACT THE BLUE STAKE CENTER AT (602) 263-1100 TWO WORKING DAYS BEFORE EXCAVATION IS TO BEGIN. THE CENTER WILL SEE THAT THE LOCATION OF THE UNDERGROUND UTILITY LINES IS IDENTIFIED FOR THE PROJECT.
11. ALL EXCAVATION AND GRADING WHICH IS NOT IN PUBLIC RIGHTS-OF-WAY OR IN EASEMENTS GRANTED FOR PUBLIC PURPOSES MUST CONFORM TO SECTION 1803 AND APPENDIX J OF THE 2006 EDITION OF THE INTERNATIONAL BUILDING CODE PREPARED BY THE INTERNATIONAL CODE COUNCIL. A PERMIT FOR THIS GRADING MUST BE SECURED FROM THE CITY.
12. THRUST RESTRAINT, WHERE REQUIRED, ON ALL CITY WATER LINES SHALL BE PROVIDED USING MEGALUG MECHANICAL JOINT RESTRAINTS OR CITY-APPROVED EQUAL.
13. ANY ASPHALT MIX DESIGN USED ON CITY PROJECTS SHALL HAVE BEEN APPROVED FOR THAT USE PER SECTION 5-10 THE CITY'S DS&PM AND APPEAR ON THE "APPROVED LIST OF ASPHALT MIXES" AS DISTRIBUTED BY THE EAST VALLEY ASPHALT COMMITTEE (EVAC).
14. THE CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE AND REPLACE, AT NO ADDITIONAL COST TO THE CITY, ANY AND ALL PAVEMENT, SIDEWALK, CURB AND GUTTER, DRAINAGE STRUCTURES, ETC. OUTSIDE THE PAY LIMIT THAT ARE DAMAGED DUE TO THEIR ACTIVITIES ON THE PROJECT. THIS INCLUDES, BUT IS NOT LIMITED TO, THE REMOVAL AND REPLACEMENT OF NEWLY CRACKED ROADWAY INFRASTRUCTURE, THE REMOVAL AND REPLACEMENT OF EXISTING CRACKED ROADWAY INFRASTRUCTURE WHERE THE CRACKS HAVE BEEN ENLARGED DUE TO THE CONTRACTOR'S OPERATIONS, THE REMOVAL AND REPLACEMENT OF DEFORMED ROADWAY INFRASTRUCTURE. ALL SAWCUTS USED FOR THE REMOVAL OF THESE ITEMS SHALL BE PERPENDICULAR AND PARALLEL TO THE CENTERLINE CONTROLLING THAT ITEM, OR AT THE DIRECTION OF THE CITY'S CAPITAL PROJECTS INSPECTOR.
15. ALL CAPITAL IMPROVEMENT PROJECTS SHALL MEET THE PROCEDURES AND STANDARDS FOR THE USE OF TEMPORARY/SECURITY FENCING AROUND THE PERIMETER OF CONSTRUCTION SITES, AS DEFINED IN THE CITY'S ZONING ORDINANCE, ARTICLE VII, SECTION 7.700.

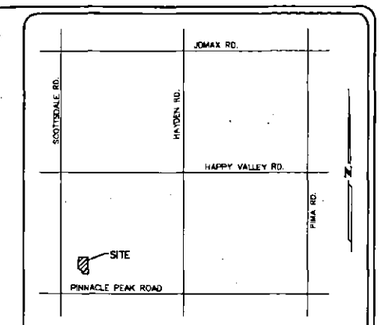
PRELIMINARY NOT FOR CONSTRUCTION

Contact Arizona 811 at least two full working days before you begin excavation. ARIZONA811 Call 811 or Click Arizona811.com

OWNER
INVESTMENT PROPERTY ASSOCIATES, LLC. (IPA)
1600 S BEACON BLVD. SUITE 260
GRAND HAVEN, MICHIGAN 49417
PH:616-846-6900

ARCHITECT
TODD & ASSOCIATES, INC.
4019 N. 44TH STREET
PHOENIX, AZ 85018
PH: 602-952-8280
FAX: 602-952-8895
CONTACT: BRENT FIKE
EMAIL: BFIKE@TODDASSOC.COM

ENGINEER
SITE CONSULTANTS INC.
113 S. ROCKFORD DR.
TEMPE, AZ. 85281
PH: 480-894-2820
FAX: 480-894-2847
CONTACT: MICHAEL J. CAYLOR, P.E.
EMAIL: MICHAEL@SITECONSULTANTS.NET



VICINITY MAP
N.T.S.

SHEET INDEX

SITE INFORMATION

ADDRESS: 23733 N. SCOTTSDALE ROAD
SCOTTSDALE AZ. 85255

SITE AREA: NET 195,956 S.F. (4.4985 ACRES)

DISTURBANCE AREA: 195,956 S.F. (4.4985 ACRES)

ZONING: C-2 ESL

ASSESSORS PARCEL NUMBER: 212-05-574

QUARTER SECTION: 45-45

GENERAL NOTES FOR PUBLIC WORKS CONSTRUCTION

1. ALL CONSTRUCTION IN THE PUBLIC RIGHT-OF-WAY OR IN EASEMENT GRANTED FOR PUBLIC USE MUST CONFORM TO THE LATEST MARICOPA ASSOCIATION OF GOVERNMENTS (MAG) UNIFORM STANDARD SPECIFICATIONS AND UNIFORM STANDARDS DETAILS FOR PUBLIC WORKS CONSTRUCTION AS AMENDED BY THE LATEST VERSION OF THE CITY OF SCOTTSDALE SUPPLEMENTAL STANDARD SPECIFICATIONS AND SUPPLEMENTAL STANDARD DETAILS. IF THERE IS A CONFLICT, THE CITY'S SUPPLEMENTAL STANDARD DETAILS WILL GOVERN.
2. THE CITY ONLY APPROVES THE SCOPE, NOT THE DETAIL OF ENGINEERING DESIGNS; THEREFORE, IF CONSTRUCTION QUANTITIES ARE SHOWN ON THESE PLANS, THEY ARE NOT VERIFIED BY THE CITY.
3. THE APPROVAL OF PLANS IS VALID FOR SIX (6) MONTHS. IF AN ENCROACHMENT PERMIT FOR THE CONSTRUCTION HAS NOT BEEN ISSUED WITHIN SIX MONTHS, THE PLANS MUST BE RESUBMITTED TO THE CITY FOR REAPPROVAL.
4. A PUBLIC WORKS INSPECTOR WILL INSPECT ALL WORKS WITHIN THE CITY OF SCOTTSDALE RIGHTS-OF-WAY AND IN EASEMENTS. NOTIFY INSPECTION SERVICES 24 HOURS PRIOR TO BEGINNING CONSTRUCTION BY CALLING 480-312-5750.
5. WHENEVER EXCAVATION IS NECESSARY, CALL THE BLUE STAKE CENTER, 602-263-1100, TWO WORKING DAYS BEFORE EXCAVATION BEGINS. THE CENTER WILL SEE THAT THE LOCATION OF THE UNDERGROUND UTILITY LINES IS IDENTIFIED FOR THE PROJECT. CALL "COLLECT", IF NECESSARY.
6. ENCROACHMENT PERMITS ARE REQUIRED FOR ALL WORK IN PUBLIC RIGHTS-OF-WAY AND EASEMENTS GRANTED FOR PUBLIC PURPOSES. AN ENCROACHMENT PERMIT WILL BE ISSUED BY THE CITY ONLY AFTER THE REGISTRANT HAS PAID A BASE FEE PLUS A FEE FOR INSPECTION SERVICES. COPIES OF ALL PERMITS MUST BE RETAINED ON-SITE AND BE AVAILABLE FOR INSPECTION AT ALL TIMES. FAILURE TO PRODUCE THE REQUIRED PERMITS WILL RESULT IN IMMEDIATE SUSPENSION OF ALL WORK UNTIL THE PROPER PERMIT DOCUMENTATION IS OBTAINED.
7. ALL EXCAVATION AND GRADING THAT IS NOT IN THE PUBLIC RIGHTS-OF-WAY OR NOT IN EASEMENTS GRANTED FOR PUBLIC USE MUST CONFORM TO CHAPTER 70, EXCAVATION AND GRADING, OF THE LATEST EDITION OF THE UNIFORM BUILDING CODE PREPARED BY THE INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS. A PERMIT FOR THIS GRADING MUST BE SECURED FROM THE CITY FOR A FEE ESTABLISHED BY UNIFORM BUILDING CODE.

FEMA

COMMUNITY NUMBER	PANEL # PANEL DATE	SUFFIX	DATE OF FIRM (INDEX DATE)	FIRM ZONE	BASE FLOOD ELEVATION (IN AO ZONE, USE DEPTH)
045012	1310 10-16-2013	L	10-16-2013	AO	1

ENGINEERS CERTIFICATION:

THE LOWEST FLOOR ELEVATION(S) AND/OR FLOOD PROOFING ELEVATION(S) ON THIS PLAN ARE SUFFICIENTLY HIGH TO PROVIDE PROTECTION FROM FLOODING CAUSED BY A 100-YEAR STORM, AND ARE IN ACCORDANCE WITH SCOTTSDALE REVISED CODE, CHAPTER 37 - FLOODPLAIN AND STORMWATER REGULATION.

THE TWO BUILDINGS ARE STRUCTURALLY INDEPENDENT AND COMPLY WITH FEMA'S STRUCTURAL INDEPENDENT DEFINITION.

DRAINAGE NOTE

THE PAD ELEVATIONS OF ALL NEW A/C AND/OR ELECTRO-MECHANICAL UNITS WILL BE SET AT OR ABOVE RFE TO PROVIDE FLOOD PROTECTION UNDER THE 100 YEAR STORM EVENT.

HIGHEST ADJACENT GRADE/FINISH FLOOR ELEVATION

MINIMUM FINISH FLOOR ELEVATION FOR NORTHERN BUILDING IS BASED ON HIGHEST ADJACENT GRADE (HAG) LOCATED AT NORTHEAST CORNER OF BUILDING,. HAG ELEVATION IS 1871.83 FEET, THEREFORE FINISH FLOOR ELEVATION IS 1873.83 (1871.83 + 2 = 1873.83 FEET).

MINIMUM FINISH FLOOR ELEVATION FOR SOUTHERN BUILDING IS BASED ON HAG LOCATED AT NORTHEAST CORNER OF THE BUILDING. HAG ELEVATION IS 1867.40 FEET, THEREFORE MINIMUM FINISH FLOOR ELEVATION IS 1869.40 (1867.40 + 2=1869.40 FEET), HOWEVER, DUE TO CONSTRUCTION CONSTRAINS USE 1869.86 ELEVATION.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE AS-BUILT IMPROVEMENTS AS SHOWN HEREON ARE LOCATED AS NOTED, AND THE LOCATIONS ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED LAND SURVEYOR _____ DATE _____

CITY OF SCOTTSDALE

REVIEW AND RECOMMENDED APPROVAL BY:

PAVING		TRAFFIC	
G & D		PLANNING	
W & S		FIRE	
RET. WALLS			

APPROVED BY: _____

ENGINEERING COORDINATION MANAGER (OR DESIGNEE) _____ DATE _____

REV.
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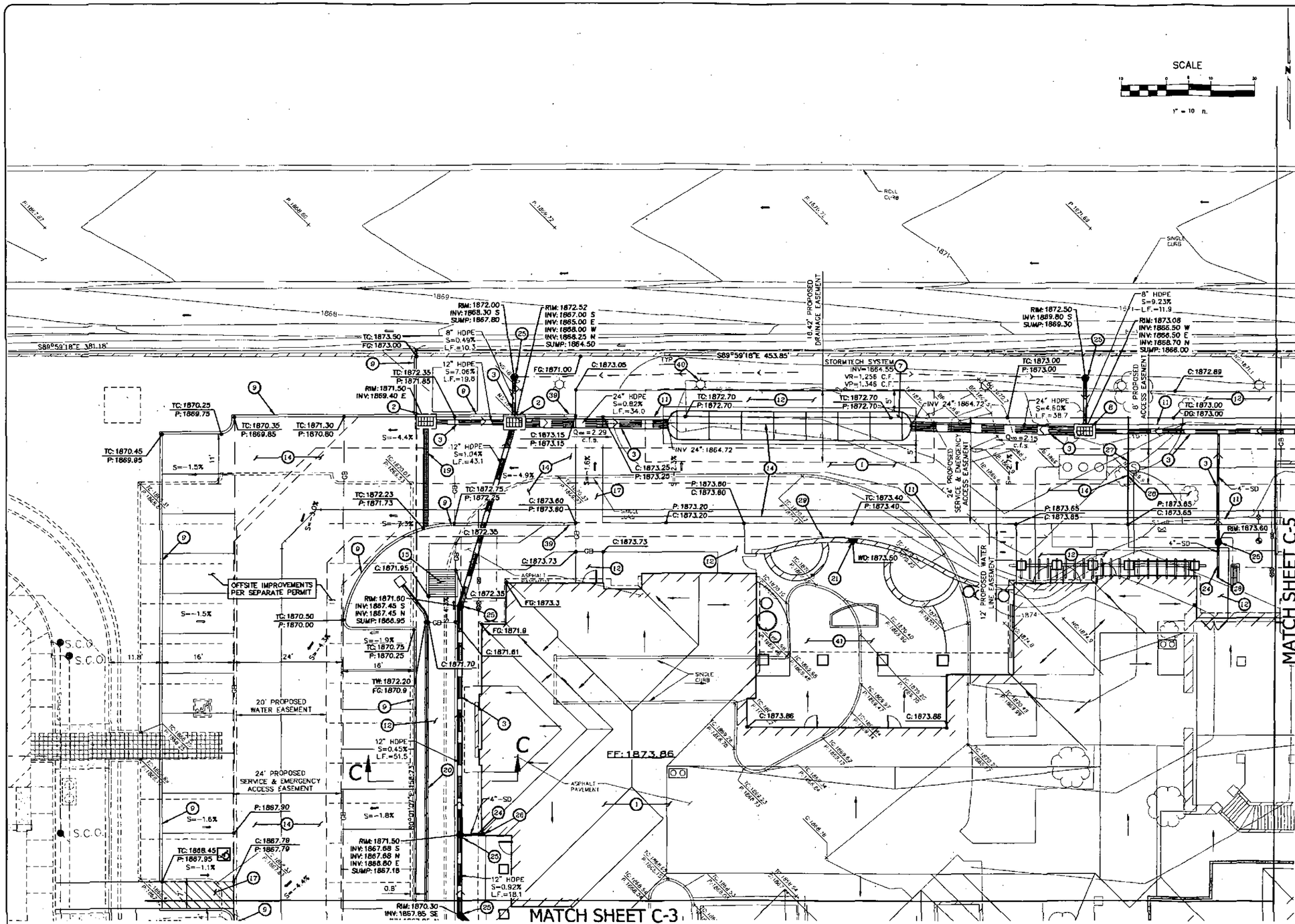
6909 East Greenway Parkway, Suite 250, Scottsdale, AZ. 85254
westwoodps.com (888) 937-5150

COVER SHEET
SENIOR LIVING FACILITY
23733 N. SCOTTSDALE ROAD
SCOTTSDALE, AZ.

PROJECT NO.	2098
SCALE:	PER PLAN
DRAWN BY:	WLG
CHECKED BY:	MJC
DATE:	10-10-2016
DWG:	2098-C-CS-Pre

C-1
OF
27



CONSTRUCTION NOTES

① CLEAR SITE; REMOVE VEGETATION, DEBRIS AND EXISTING IMPROVEMENTS WITHIN LIMITS OF NEW CONSTRUCTION.

② INSTALL CATCH BASIN PER M.A.G. DTL. 535, TYPE 'F'.

③ INSTALL ADS N-12 HP STORM DRAIN PIPE (ASTM F2487 PIPE). SIZE PER PLAN.

④ INSTALL 120"⌀ ALUMINIZED, TYPE II 12 GAUGE 5X1 CMP PIPE FOR USE AS UNDERGROUND STORMWATER RETENTION TANK. ALL JOINTS TO BE BANDED WATER TIGHT, MANUFACTURED JOINTS.

⑤ INSTALL MAXWELL PLUS DRYWELL PER DETAIL ON SHEET C-27.

⑥ INSTALL STORM DRAIN ACCESS MANHOLE.

⑦ STORM TECH SYSTEM MC-3500 CHAMBER AND END CAPS. SYSTEM PER DETAIL ON SHEET C-24.

⑧ INSTALL NYLOPLAST DRAIN BASIN WITH 2x3 M.A.G. STYLE GRATE. SEE DETAIL ON SHEET C-24.

⑨ CONSTRUCT 6" SINGLE CURB PER M.A.G. DTL. 222 TYPE 'B'

⑩ TRASH ENCLOSURE PER C.O.S. STD. DTL. 2147-1.

⑪ INSTALL RIBBON CURB PER C.O.S. STD. DTL. 2220 TYPE 'B'

⑫ CONSTRUCT SIDEWALK PER M.A.G. STD. DTL. 230. WIDTH PER PLAN. SEE ARCHITECTURAL PLANS FOR FINISH AND SCORING DETAILS.

⑬ STORM DRAIN MANHOLE PER M.A.G. STD DTL. 520 & 522.

⑭ CONSTRUCT HEAVY PAVEMENT SECTION (ALL DRIVE AISLES) 3" A.C. ON 6" A.B.C.

⑮ CONSTRUCT ACCESSIBLE RAMP PER DETAIL ON SHEET C-24.

⑯ CONSTRUCT ACCESSIBLE RAMP. REFER TO ARCHITECTURAL PLANS FOR DETAILS.

⑰ 6" THICK CONCRETE PAVEMENT PER M.A.G. DTL. 250. SEE ARCHITECTURAL PLANS FOR SURFACE TREATMENT, SCORE JOINT PATTERN AND COLOR DETAILS.

⑱ CONSTRUCT TRASH ENCLOSURE WITH GREASE CONTAINMENT AREA PER C.O.S. STD. DTL. 2147-2. SEE ARCHITECTURAL PLANS FOR DETAILS.

⑲ INSTALL 12" ACO S300K TRENCH DRAIN WITH IRON LONGITUDINAL GRATE PART NO. 96833, SEE DETAIL ON SHEET C-25; CONTRACTOR TO FORM NEW M.A.G. STD. DTL. 535, TYPE 'F' CATCH BASIN WALL AROUND OUTLET END OF NEW TRENCH DRAIN.

⑳ CONSTRUCT RETAINING WALL. SEE ARCHITECTURAL AND STRUCTURAL PLANS FOR DETAILS.

㉑ CONSTRUCT WALL OPENING PER DETAIL ON SHEET C-24.

㉒ CONCRETE STAIRS. REFER TO ARCHITECTURAL PLANS FOR DETAILS.

㉓ CURB TRANSITION FROM RIBBON CURB TO SINGLE CURB.

㉔ INSTALL DIP STORM DRAIN PIPE. SIZE PER PLAN.

㉕ INSTALL 24" NYLOPLAST DRAIN BASIN PER DETAIL ON SHEET C-24.

㉖ DECOMPOSITE GRANITE FIRE LINE SECTION PER DETAIL ON SHEET C-24.

㉗ THICKENED EDGE OF PAVEMENT PER M.A.C. STD. DTL. 201 TYPE 'A'.

㉘ CONNECT TO BUILDING ROOF DRAIN DISCHARGE; COORDINATE WITH PLUMBING AND MECHANICAL PLANS FOR DETAILS.

㉙ CONSTRUCT SITE WALL. REFER TO STRUCTURAL AND ARCHITECTURAL PLANS FOR DETAILS.

㉚ INSTALL 8" ORIFICE PLATE AT CATCH BASIN CONNECTION.

㉛ TRASH COMPACTOR AREA. REFER TO ARCHITECTURAL PLANS FOR DETAILS.

㉜ CONCRETE PAVEMENT SECTION THICKNESS VARIES. CONCRETE PER M.A.G. SECTION 725. CONTRACTOR TO APPLY TACK COAT TO EXISTING CONCRETE.

㉝ WIDE SOLID GROUTED (2/3 EMBEDDED) ANGULAR RIP-RAP D50=8" SECTION. LENGTH AND WIDTH PER PLAN.

㉞ CURB OPENING PER DETAIL ON SHEET C-24.

㉟ CONCRETE SCUPPER PER M.A.G. STD. DTL. 206-1 & 206-2

㊱ HEADWALL PER M.A.G. STD. DTL. 501-1 'U' TYPE.

㊲ INSTALL DOUBLE CATCH BASIN PER M.A.G. STD. DTL. 537.

㊳ EXISTING ELECTRIC TRANSFORMER TO REMAIN IN PLACE.

㊴ CURB TERMINATION PER M.A.G. STD. DTL. 222.

㊵ PROPOSED LIGHT POLE. REFER TO ARCHITECTURAL AND ELECTRICAL PLANS FOR DETAILS.

㊶ SEE ARCHITECTURAL PLANS FOR HARDSCAPE DETAILS.

㊷ CONSTRUCT ROLL CURB AND GUTTER PER M.A.G. STD. DTL. 220-1 TYPE 'C'.

㊸ CURB TRANSITION FROM ROLL CURB TO VERTICAL CURB PER M.A.G. STD. DTL. 221.

Ⓜ MATCH EXISTING.

PRELIMINARY NOT FOR CONSTRUCTION

Contact Arizona 811 at least two full working days before you begin excavation
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25980
MICHAEL JAMES
CAYLOR
EXPIRES 3-31-2019

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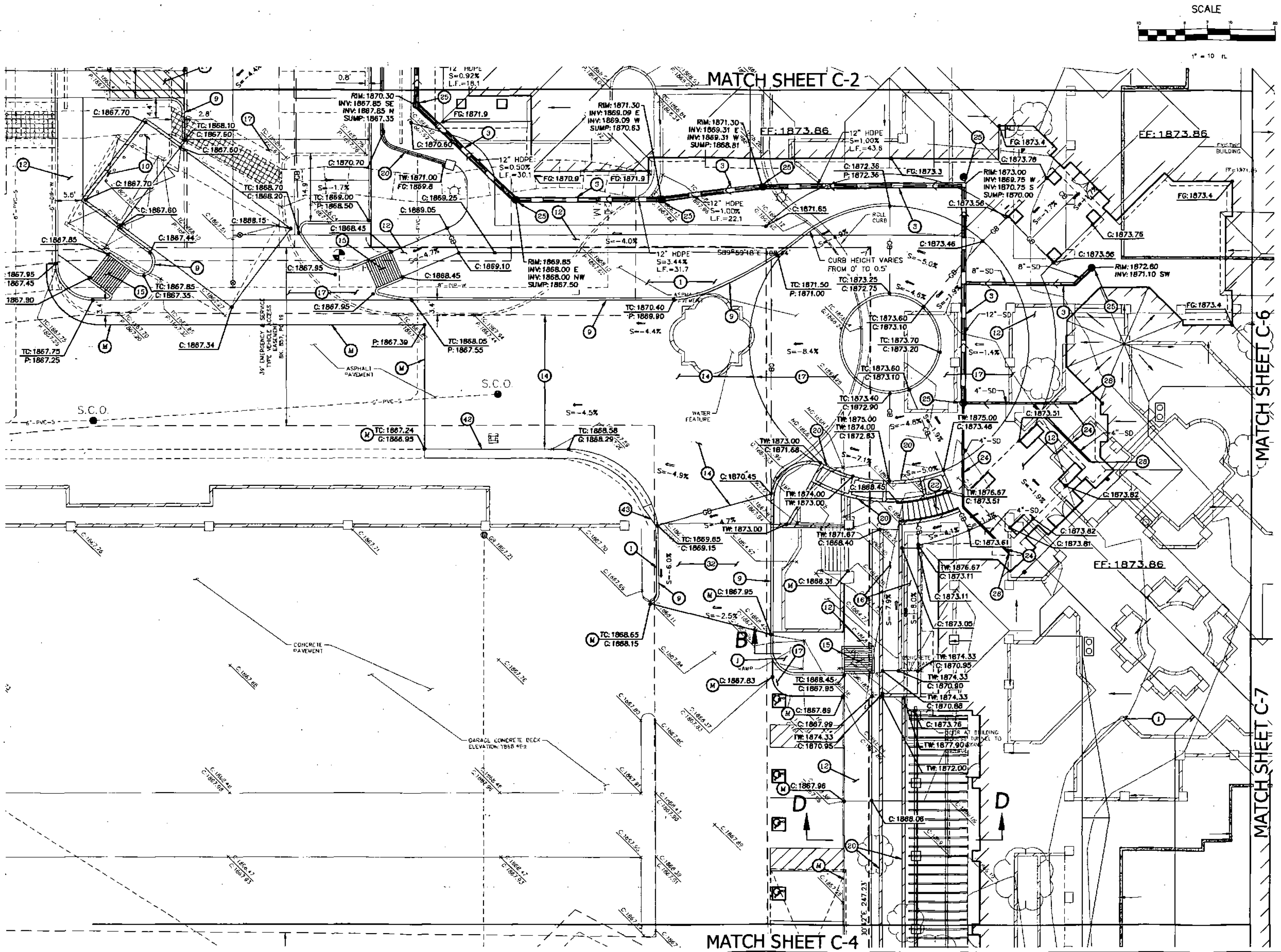
PRELIMINARY GRADING PLAN

SENIOR LIVING
23733 N. SCOTTSDALE ROAD
SCOTTSDALE, ARIZONA

PROJECT NO.: 2098
SCALE: 1" = 10'
DRAWN BY: WLG
CHECKED BY: MJC
DATE: 10-10-2018
DWG: 2098-C-GP-Prel

C-2
OF
27



CONSTRUCTION NOTES

1. CLEAR SITE; REMOVE VEGETATION, DEBRIS AND EXISTING IMPROVEMENTS WITHIN LIMITS OF NEW CONSTRUCTION.
2. INSTALL CATCH BASIN PER M.A.G. DTL. 535, TYPE 'F'.
3. INSTALL ADS N-12 HP STORM DRAIN PIPE (ASTM F2487 PIPE). SIZE PER PLAN.
4. INSTALL 120"ø ALUMINIZED, TYPE II 12 GAUGE 5X1 CMP PIPE FOR USE AS UNDERGROUND STORMWATER RETENTION TANK. ALL JOINTS TO BE BANDED WATER TIGHT, MANUFACTURED JOINTS.
5. INSTALL MAXWELL PLUS DRYWELL PER DETAIL ON SHEET C-27.
6. INSTALL STORM DRAIN ACCESS MANHOLE.
7. STORM TECH SYSTEM MC-3500 CHAMBER AND END CAPS. SYSTEM PER DETAIL ON SHEET C-24.
8. INSTALL NYLOPLAST DRAIN BASIN WITH 2x3 M.A.G. STYLE GRATE. SEE DETAIL ON SHEET C-24.
9. CONSTRUCT 6" SINGLE CURB PER M.A.G. DTL. 222 TYPE 'B'.
10. TRASH ENCLOSURE PER C.O.S. STD. DTL. 2147-1.
11. INSTALL RIBBON CURB PER C.O.S. STD. DTL. 2220 TYPE 'B'.
12. CONSTRUCT SIDEWALK PER M.A.G. STD. DTL. 230. WIDTH PER PLAN. SEE ARCHITECTURAL PLANS FOR FINISH AND SCORING DETAILS.
13. STORM DRAIN MANHOLE PER M.A.G. STD DTL 520 & 522.
14. CONSTRUCT HEAVY PAVEMENT SECTION (ALL DRIVE AISLES) 3" A.C. ON 6" A.B.C.
15. CONSTRUCT ACCESSIBLE RAMP PER DETAIL ON SHEET C-24.
16. CONSTRUCT ACCESSIBLE RAMP. REFER TO ARCHITECTURAL PLANS FOR DETAILS.
17. 6" THICK CONCRETE PAVEMENT PER M.A.G. DTL. 250. SEE ARCHITECTURAL PLANS FOR SURFACE TREATMENT. SCORE JOINT PATTERN AND COLOR DETAILS.
18. CONSTRUCT TRASH ENCLOSURE WITH GREASE CONTAINMENT AREA PER C.O.S. STD. DTL. 2147-2. SEE ARCHITECTURAL PLANS FOR DETAILS.
19. INSTALL 12" ACO S300K TRENCH DRAIN WITH IRON LONGITUDINAL GRATE PART NO. 96833, SEE DETAIL ON SHEET C-25; CONTRACTOR TO FORM NEW M.A.G. STD. DTL. 535, TYPE 'F' CATCH BASIN WALL AROUND OUTLET END OF NEW TRENCH DRAIN.
20. CONSTRUCT RETAINING WALL. SEE ARCHITECTURAL AND STRUCTURAL PLANS FOR DETAILS.
21. CONSTRUCT WALL OPENING PER DETAIL ON SHEET C-24.
22. CONCRETE STAIRS. REFER TO ARCHITECTURAL PLANS FOR DETAILS.
23. CURB TRANSITION FROM RIBBON CURB TO SINGLE CURB.
24. INSTALL DIP STORM DRAIN PIPE. SIZE PER PLAN.
25. INSTALL 24" NYLOPLAST DRAIN BASIN PER DETAIL ON SHEET C-24.
26. DECOMPOSITE GRANITE FIRE LINE SECTION PER DETAIL ON SHEET C-24.
27. THICKENED EDGE OF PAVEMENT PER M.A.G. STD. DTL. 201 TYPE 'A'.
28. CONNECT TO BUILDING ROOF DRAIN DISCHARGE; COORDINATE WITH PLUMBING AND MECHANICAL PLANS FOR DETAILS.
29. CONSTRUCT SITE WALL. REFER TO STRUCTURAL AND ARCHITECTURAL PLANS FOR DETAILS.
30. INSTALL 8" ORIFICE PLATE AT CATCH BASIN CONNECTION.
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32. CONCRETE PAVEMENT SECTION THICKNESS VARIES. CONCRETE PER M.A.G. SECTION 725. CONTRACTOR TO APPLY TACK COAT TO EXISTING CONCRETE.
33. WIDE SOLID GROUTED (2/3 EMBEDDED) ANGULAR RIP-RAP D50=8" SECTION. LENGTH AND WIDTH PER PLAN.
34. CURB OPENING PER DETAIL ON SHEET C-24.
35. CONCRETE SCUPPER PER M.A.G. STD. DTL. 206-1 & 206-2.
36. HEADWALL PER M.A.G. STD. DTL. 501-1 'U' TYPE.
37. INSTALL DOUBLE CATCH BASIN PER M.A.G. STD. DTL. 537.
38. EXISTING ELECTRIC TRANSFORMER TO REMAIN IN PLACE.
39. CURB TERMINATION PER M.A.G. STD. DTL. 222.
40. PROPOSED LIGHT POLE. REFER TO ARCHITECTURAL AND ELECTRICAL PLANS FOR DETAILS.
41. SEE ARCHITECTURAL PLANS FOR HARDSCAPE DETAILS.
42. CONSTRUCT ROLL CURB AND GUTTER PER M.A.G. STD. DTL. 220-1 TYPE 'C'.
43. CURB TRANSITION FROM ROLL CURB TO VERTICAL CURB PER M.A.G. STD. DTL. 221.

M. MATCH EXISTING.

PRELIMINARY NOT FOR CONSTRUCTION

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25960 MICHAEL JAMES CAYLOR
EXPIRES 3-31-2019

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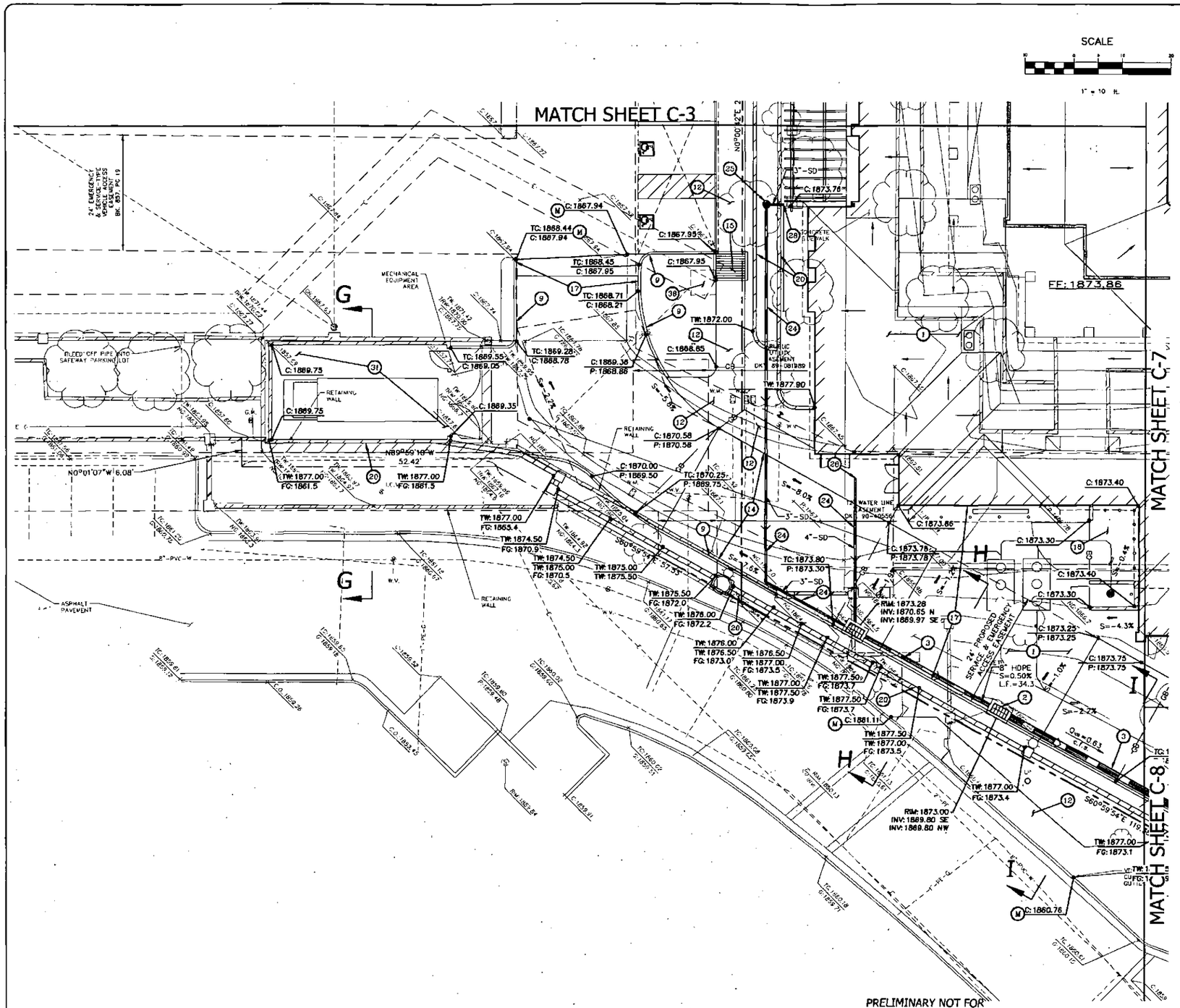
PRELIMINARY GRADING PLAN

SENIOR LIVING
23733 N. SCOTTSDALE ROAD
SCOTTSDALE, ARIZONA

PROJECT NO.:	2098
SCALE:	1" = 10'
DRAWN BY:	WLG
CHECKED BY.	MJC
DATE:	10-10-2016
DWG:	2098-C-GP-Prel

C-3 OF 27



CONSTRUCTION NOTES

1. CLEAR SITE; REMOVE VEGETATION, DEBRIS AND EXISTING IMPROVEMENTS WITHIN LIMITS OF NEW CONSTRUCTION.
2. INSTALL CATCH BASIN PER M.A.G. DTL. 535, TYPE 'F'.
3. INSTALL ADS N-12 HP STORM DRAIN PIPE (ASTM F2487 PIPE). SIZE PER PLAN.
4. INSTALL 120"ø ALUMINIZED, TYPE II 12 GAUGE 5X1 CMP PIPE FOR USE AS UNDERGROUND STORMWATER RETENTION TANK. ALL JOINTS TO BE BANDED WATER TIGHT, MANUFACTURED JOINTS.
5. INSTALL MAXWELL PLUS DRYWELL PER DETAIL ON SHEET C-27.
6. INSTALL STORM DRAIN ACCESS MANHOLE.
7. STORM TECH SYSTEM MC-3500 CHAMBER AND END CAPS. SYSTEM PER DETAIL ON SHEET C-24.
8. INSTALL NYLOPLAST DRAIN BASIN WITH 2x3 M.A.G. STYLE GRATE. SEE DETAIL ON SHEET C-24.
9. CONSTRUCT 6" SINGLE CURB PER M.A.G. DTL. 222 TYPE 'B'.
10. TRASH ENCLOSURE PER C.O.S. STD. DTL. 2147-1.
11. INSTALL RIBBON CURB PER C.O.S. STD. DTL. 2220 TYPE 'B'.
12. CONSTRUCT SIDEWALK PER M.A.G. STD. DTL. 230. WIDTH PER PLAN. SEE ARCHITECTURAL PLANS FOR FINISH AND SCORING DETAILS.
13. STORM DRAIN MANHOLE PER M.A.G. STD DTL. 520 & 522.
14. CONSTRUCT HEAVY PAVEMENT SECTION (ALL DRIVE AISLES) 3" A.C. ON 6" A.B.C.
15. CONSTRUCT ACCESSIBLE RAMP PER DETAIL ON SHEET C-24.
16. CONSTRUCT ACCESSIBLE RAMP. REFER TO ARCHITECTURAL PLANS FOR DETAILS.
17. 6" THICK CONCRETE PAVEMENT PER M.A.G. DTL. 250. SEE ARCHITECTURAL PLANS FOR SURFACE TREATMENT, SCORE JOINT PATTERN AND COLOR DETAILS.
18. CONSTRUCT TRASH ENCLOSURE WITH GREASE CONTAINMENT AREA PER C.O.S. STD. DTL. 2147-2. SEE ARCHITECTURAL PLANS FOR DETAILS.
19. INSTALL 12" ACO S300K TRENCH DRAIN WITH IRON LONGITUDINAL GRATE PART NO. 98833. SEE DETAIL ON SHEET C-25. CONTRACTOR TO FORM NEW M.A.G. STD. DTL. 535, TYPE 'F' CATCH BASIN WALL AROUND OUTLET END OF NEW TRENCH DRAIN.
20. CONSTRUCT RETAINING WALL. SEE ARCHITECTURAL AND STRUCTURAL PLANS FOR DETAILS.
21. CONSTRUCT WALL OPENING PER DETAIL ON SHEET C-24.
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(M) MATCH EXISTING.

PRELIMINARY NOT FOR CONSTRUCTION

Contact Arizona 811 at least two full working days before you begin excavation. Call 811 or click Arizona811.com

REV.
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REV.
REV.

Registered Professional Engineer Certificate 25960 MICHAEL JAMES TAYLOR Date Signed U.S.A. EXPIRES 3-31-2019

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PRELIMINARY GRADING PLAN

SENIOR LIVING
23733 N. SCOTTSDALE ROAD
SCOTTSDALE, ARIZONA

PROJECT NO.:	2098
SCALE:	1" = 10'
DRAWN BY:	WLG
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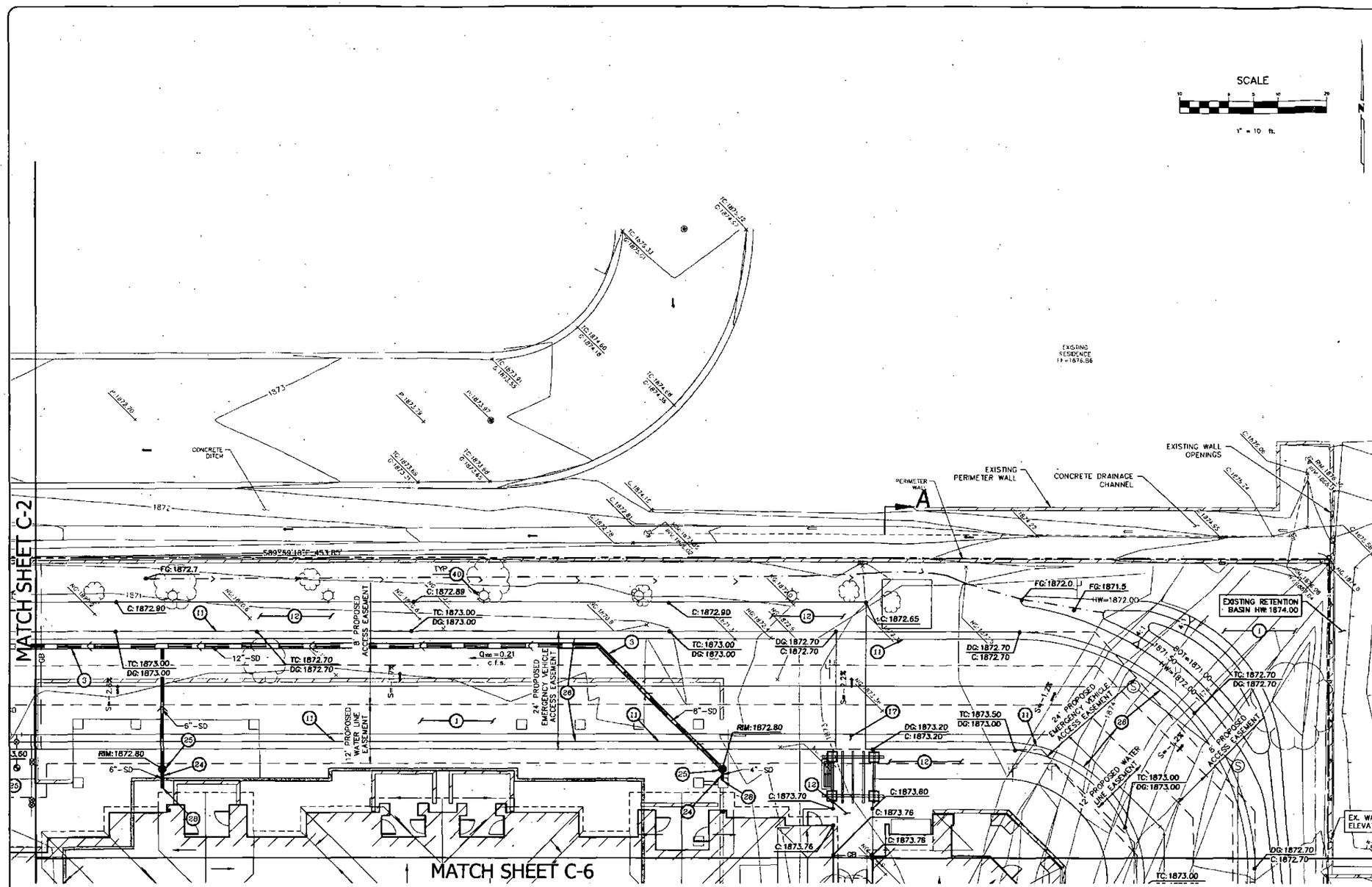
C-4 OF 27



CONSTRUCTION NOTES

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11. INSTALL RIBBON CURB PER C.O.S. STD. DTL. 2220 TYPE 'B'.
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22. CONCRETE STAIRS. REFER TO ARCHITECTURAL PLANS FOR DETAILS.
23. CURB TRANSITION FROM RIBBON CURB TO SINGLE CURB.
24. INSTALL DIP STORM DRAIN PIPE. SIZE PER PLAN.
25. INSTALL 24" NYLOPLAST DRAIN BASIN PER DETAIL ON SHEET C-24.
26. DECOMPOSITE GRANITE FIRE LINE SECTION PER DETAIL ON SHEET C-24.
27. THICKENED EDGE OF PAVEMENT PER M.A.G. STD. DTL. 201 TYPE 'A'.
28. CONNECT TO BUILDING ROOF DRAIN DISCHARGE; COORDINATE WITH PLUMBING AND MECHANICAL PLANS FOR DETAILS.
29. CONSTRUCT SITE WALL. REFER TO STRUCTURAL AND ARCHITECTURAL PLANS FOR DETAILS.
30. INSTALL 8" ORIFICE PLATE AT CATCH BASIN CONNECTION.
31. TRASH COMPACTOR AREA. REFER TO ARCHITECTURAL PLANS FOR DETAILS.
32. CONCRETE PAVEMENT SECTION THICKNESS VARIES. CONCRETE PER M.A.G. SECTION 725. CONTRACTOR TO APPLY TACK COAT TO EXISTING CONCRETE.
33. WIDE SOLID GROUTED (2/3 EMBEDDED) ANGULAR RIP-RAP D50=8" SECTION. LENGTH AND WIDTH PER PLAN.
34. CURB OPENING PER DETAIL ON SHEET C-24.
35. CONCRETE SCUPPER PER M.A.G. STD. DTL. 206-1 & 206-2.
36. HEADWALL PER M.A.G. STD. DTL. 501-1 'U' TYPE.
37. INSTALL DOUBLE CATCH BASIN PER M.A.G. STD. DTL. 537.
38. EXISTING ELECTRIC TRANSFORMER TO REMAIN IN PLACE.
39. CURB TERMINATION PER M.A.G. STD. DTL. 222.
40. PROPOSED LIGHT POLE. REFER TO ARCHITECTURAL AND ELECTRICAL PLANS FOR DETAILS.
41. SEE ARCHITECTURAL PLANS FOR HARDSCAPE DETAILS.
42. CONSTRUCT ROLL CURB AND GUTTER PER M.A.G. STD. DTL. 220-1 TYPE 'C'.
43. CURB TRANSITION FROM ROLL CURB TO VERTICAL CURB PER M.A.G. STD. DTL. 221.

M MATCH EXISTING.

PRELIMINARY NOT FOR CONSTRUCTION

Arizona Blue Stake, Inc. — Arizona 811 at least two full working days before you begin excavation. Call 811 or Click Arizona811.com

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Registered Professional Engineer Certificate — 25950 MICHAEL JAMES TAYLOR — EXPIRES 3-31-2019

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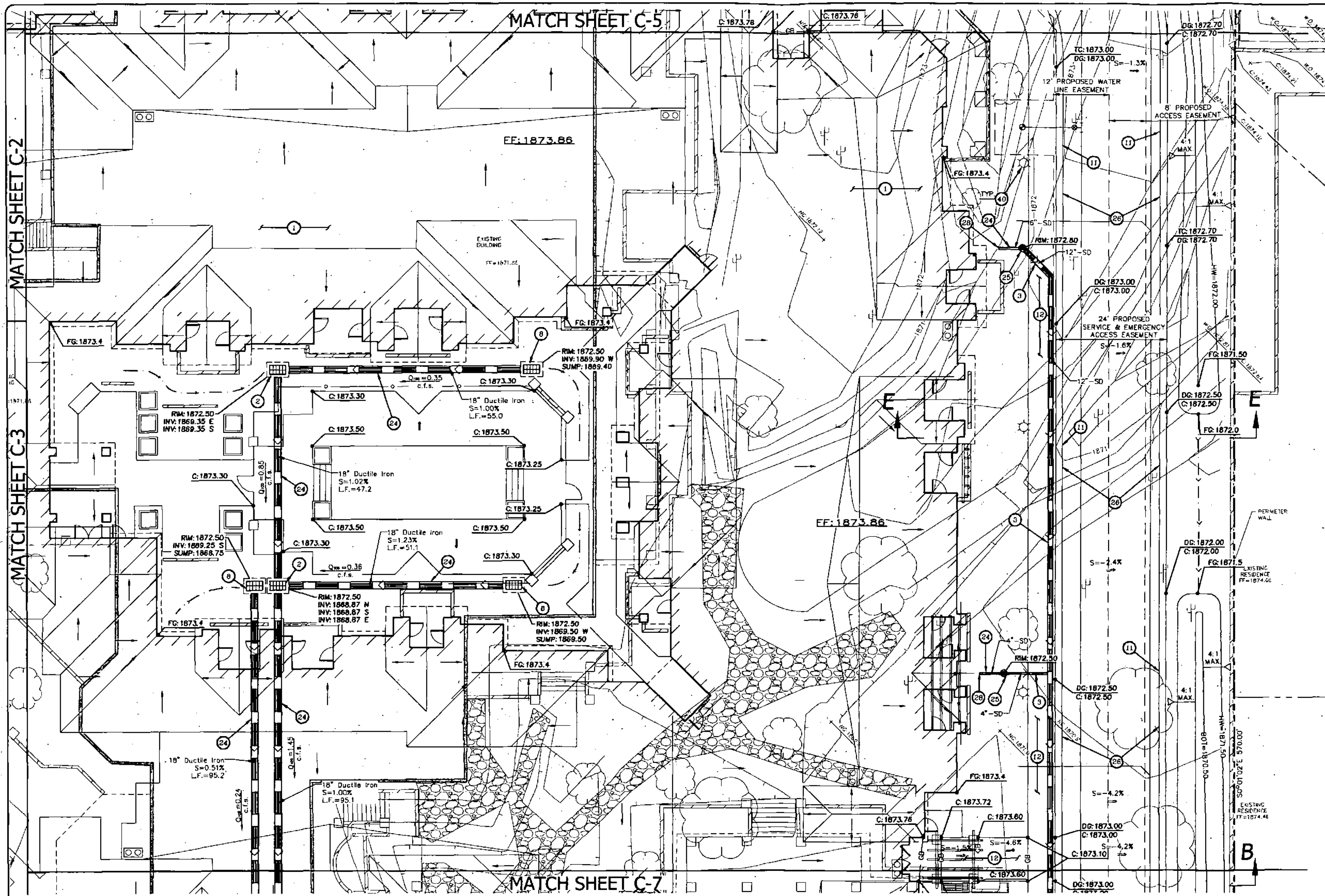
westwoodps.com (888) 937-5150

PRELIMINARY GRADING PLAN

SENIOR LIVING
23733 N. SCOTTSDALE ROAD
SCOTTSDALE, ARIZONA

PROJECT NO:	2098
SCALE:	1" = 10'
DRAWN BY:	MLG
CHECKED BY	MJC
DATE:	10-10-2018
DWG:	2098-C-GP-Pre

C-5 OF 27



SCALE

1" = 10 ft.

PRELIMINARY NOT FOR CONSTRUCTION

CONSTRUCTION NOTES

1. CLEAR SITE: REMOVE VEGETATION, DEBRIS AND EXISTING IMPROVEMENTS WITHIN LIMITS OF NEW CONSTRUCTION.
2. INSTALL CATCH BASIN PER M.A.G. DTL. 535, TYPE 'F'.
3. INSTALL ADS N-12 HP STORM DRAIN PIPE (ASTM F2487 PIPE). SIZE PER PLAN.
4. INSTALL 120"ø ALUMINIZED, TYPE II 12 GAUGE 5X1 CMP PIPE FOR USE AS UNDERGROUND STORMWATER RETENTION TANK. ALL JOINTS TO BE BANDED WATER TIGHT, MANUFACTURED JOINTS.
5. INSTALL MAXWELL PLUS DRYWELL PER DETAIL ON SHEET C-27.
6. INSTALL STORM DRAIN ACCESS MANHOLE.
7. STORM TECH SYSTEM MC-3500 CHAMBER AND END CAPS. SYSTEM PER DETAIL ON SHEET C-24.
8. INSTALL NYLOPLAST DRAIN BASIN WITH 2x3 M.A.G. STYLE GRATE. SEE DETAIL ON SHEET C-24.
9. CONSTRUCT 6" SINGLE CURB PER M.A.G. DTL. 222 TYPE 'B'.
10. TRASH ENCLOSURE PER C.O.S. STD. DTL. 2147-1.
11. INSTALL RIBBON CURB PER C.O.S. STD. DTL. 2220 TYPE 'B'.
12. CONSTRUCT SIDEWALK PER M.A.G. STD. DTL. 230. WIDTH PER PLAN. SEE ARCHITECTURAL PLANS FOR FINISH AND SCORING DETAILS.
13. STORM DRAIN MANHOLE PER M.A.C. STD DTL. 520 & 522.
14. CONSTRUCT HEAVY PAVEMENT SECTION (ALL DRIVE AISLES) 3" A.C. ON 6" A.B.C.
15. CONSTRUCT ACCESSIBLE RAMP PER DETAIL ON SHEET C-24.
16. CONSTRUCT ACCESSIBLE RAMP. REFER TO ARCHITECTURAL PLANS FOR DETAILS.
17. 6" THICK CONCRETE PAVEMENT PER M.A.G. DTL. 250. SEE ARCHITECTURAL PLANS FOR SURFACE TREATMENT, SCORE JOINT PATTERN AND COLOR DETAILS.
18. CONSTRUCT TRASH ENCLOSURE WITH GREASE CONTAINMENT AREA PER C.O.S. STD. DTL. 2147-2. SEE ARCHITECTURAL PLANS FOR DETAILS.
19. INSTALL 12" ACO S300K TRENCH DRAIN WITH IRON LONGITUDINAL GRATE PART NO. 96833, SEE DETAIL ON SHEET C-25; CONTRACTOR TO FORM NEW M.A.G. STD. DTL. 535, TYPE 'F' CATCH BASIN WALL AROUND OUTLET END OF NEW TRENCH DRAIN.
20. CONSTRUCT RETAINING WALL. SEE ARCHITECTURAL AND STRUCTURAL PLANS FOR DETAILS.
21. CONSTRUCT WALL OPENING PER DETAIL ON SHEET C-24.
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(M) MATCH EXISTING.

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PRELIMINARY GRADING PLAN

SENIOR LIVING
23733 N. SCOTTSDALE ROAD
SCOTTSDALE, ARIZONA

PROJECT NO.:	2098
SCALE:	1" = 10'
DRAWN BY:	WLG
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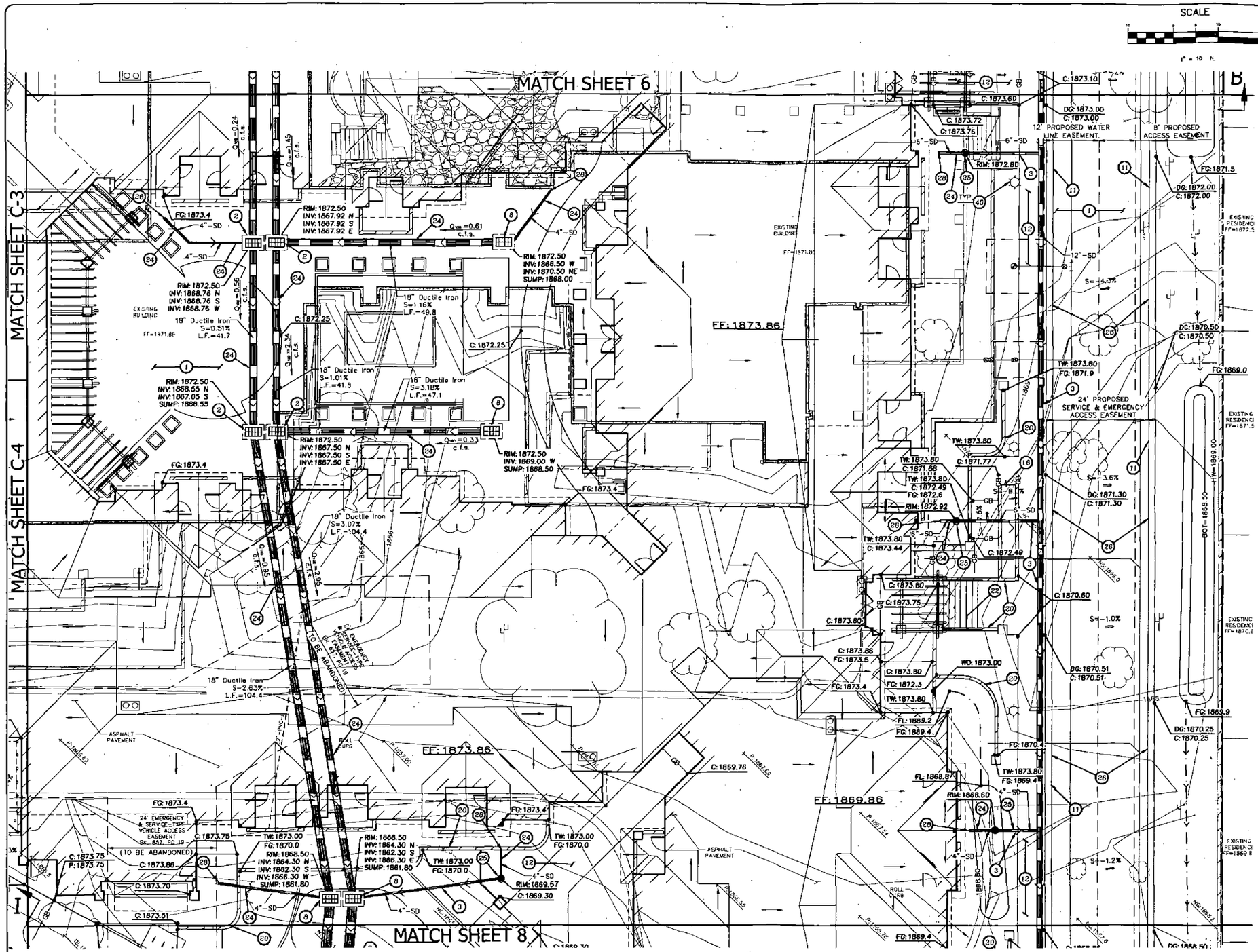
C-6 OF 27



CONSTRUCTION NOTES

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② INSTALL CATCH BASIN PER M.A.G. DTL. 535, TYPE 'F'.

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⑤ INSTALL MAXWELL PLUS DRYWELL PER DETAIL ON SHEET C-27.

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⑦ STORM TECH SYSTEM MC-3500 CHAMBER AND END CAPS. SYSTEM PER DETAIL ON SHEET C-24.

⑧ INSTALL NYLOPLAST DRAIN BASIN WITH 2x3 M.A.G. STYLE GRATE. SEE DETAIL ON SHEET C-24.

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⑪ INSTALL RIBBON CURB PER C.O.S. STD. DTL. 2220 TYPE 'B'.

⑫ CONSTRUCT SIDEWALK PER M.A.G. STD. DTL. 230. WIDTH PER PLAN. SEE ARCHITECTURAL PLANS FOR FINISH AND SCORING DETAILS.

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MICHAEL JAMES CAYLOR
EXPIRES 3-31-2019

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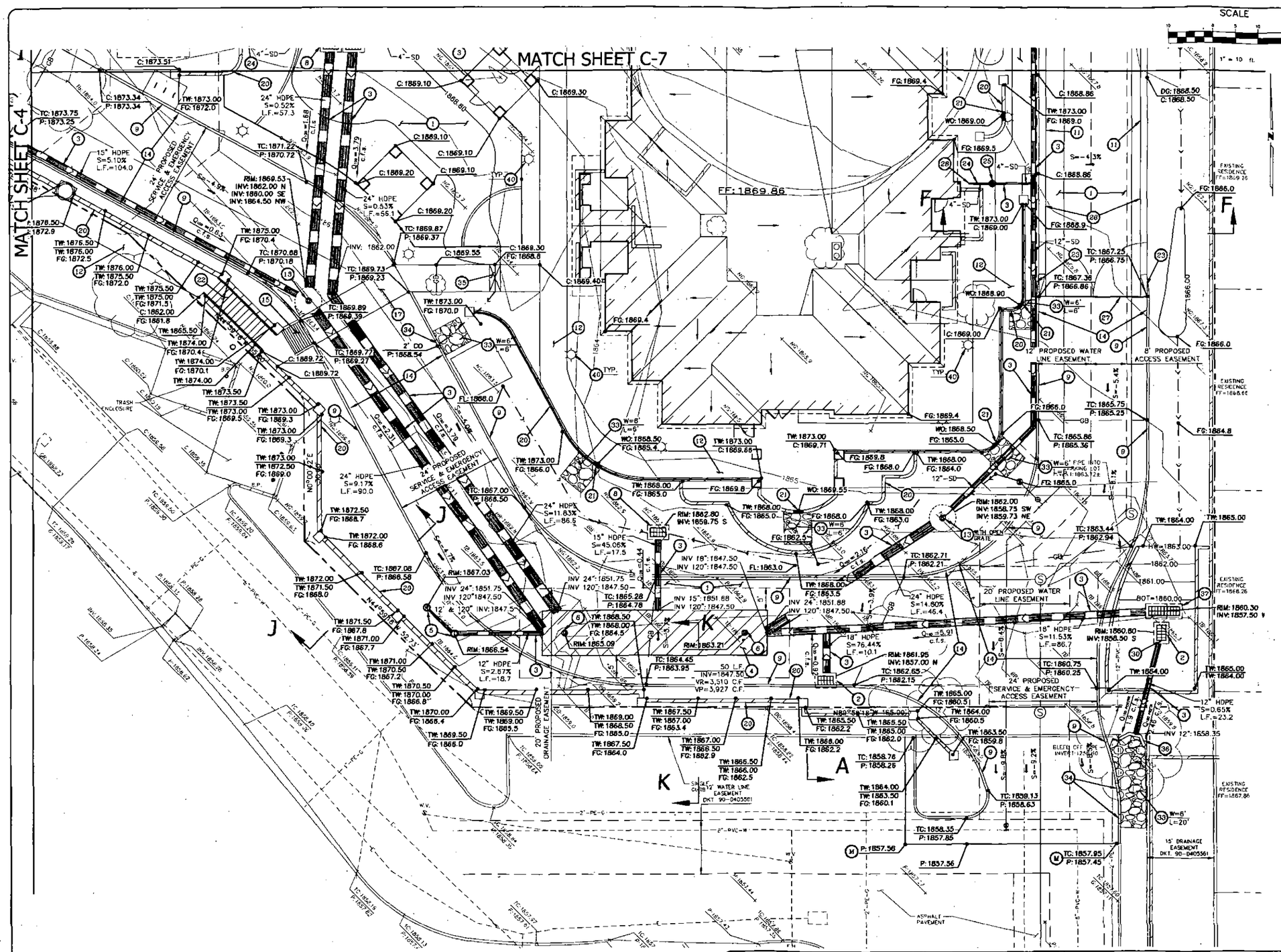
PRELIMINARY GRADING PLAN

SENIOR LIVING
23733 N. SCOTTSDALE ROAD
SCOTTSDALE, ARIZONA

PROJECT NO.: 2098
SCALE: 1" = 10'
DRAWN BY: MLG
CHECKED BY: MJC
DATE: 10-10-2016
DWG: 2098-C-GP-Prel

C-7
OF
27



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18. CONSTRUCT TRASH ENCLOSURE WITH GREASE CONTAINMENT AREA PER C.O.S. STD. DTL. 2147-2. SEE ARCHITECTURAL PLANS FOR DETAILS.
19. INSTALL 12" ACO S300K TRENCH DRAIN WITH IRON LONGITUDINAL GRATE PART NO. 98833. SEE DETAIL ON SHEET C-25; CONTRACTOR TO FORM NEW M.A.G. STD. DTL. 535, TYPE 'F' CATCH BASIN WALL AROUND OUTLET END OF NEW TRENCH DRAIN.
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(N) MATCH EXISTING.

PRELIMINARY NOT FOR CONSTRUCTION

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CERTIFICATE NO. 25960 MICHAEL JAMES TAYLOR REGISTERED PROFESSIONAL ENGINEER ARIZONA U.S.A. EXPIRES 3-31-2019

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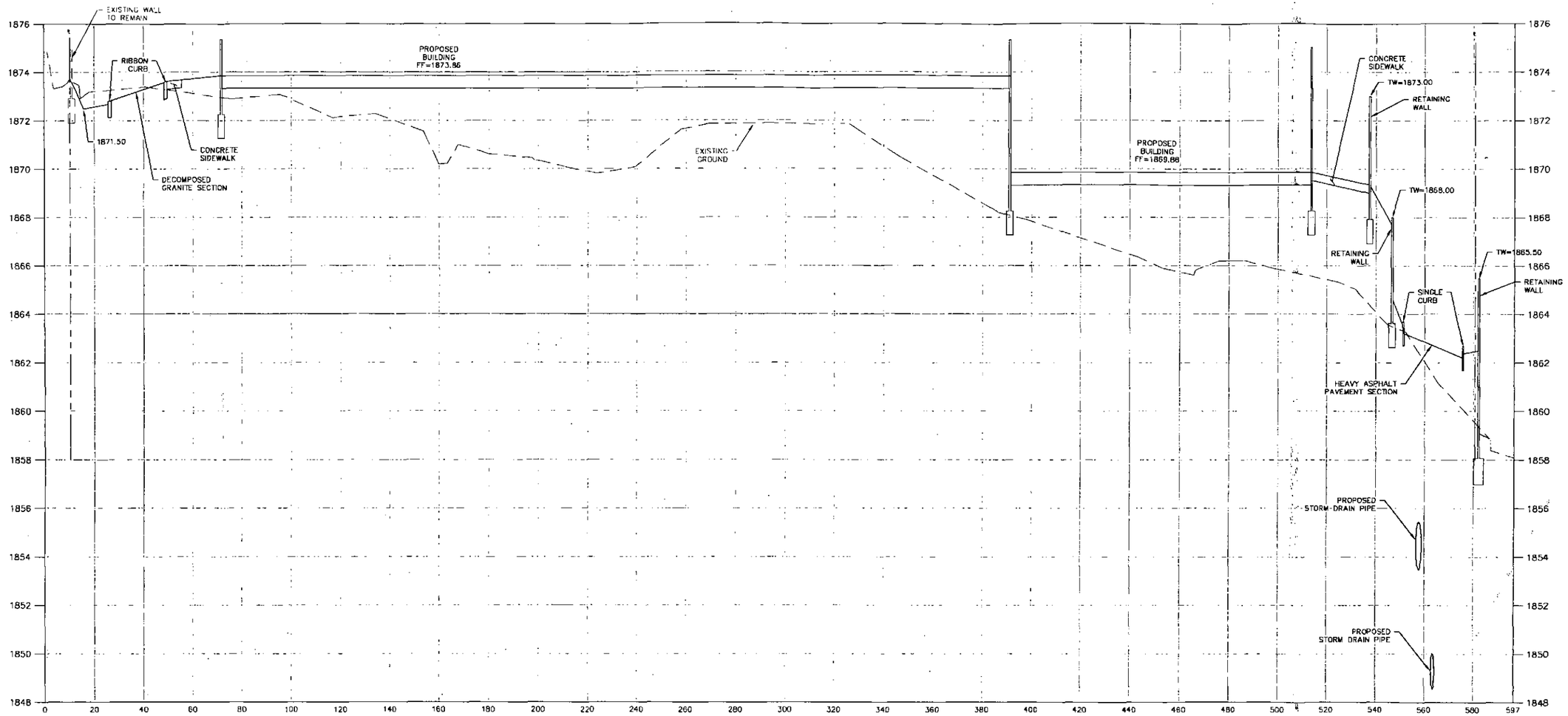
PRELIMINARY GRADING PLAN

SENIOR LIVING
23733 N. SCOTTSDALE ROAD
SCOTTSDALE, ARIZONA

PROJECT NO:	2098
SCALE:	1" = 10'
DRAWN BY:	WLG
CHECKED BY:	MJC
DATE:	10-10-2016
DWG:	2098-C-GP-Prel

C-8 OF 27



SECTION A-A
SCALE HZ 1" = 20', VT 1" = 2'

PRELIMINARY NOT FOR CONSTRUCTION

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22960 MICHAEL JAMES CAYLOR JR. REGISTERED LAND SURVEYOR ARIZONA U.S.A.
EXPIRES 3-31-2019

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SECTIONS

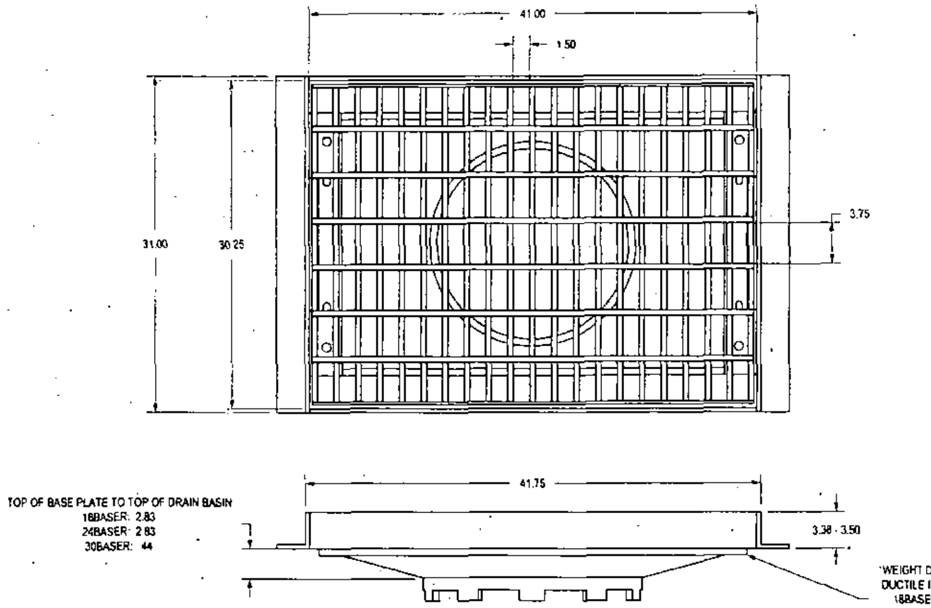
SENIOR LIVING FACILITY
23733 N. SCOTTSDALE ROAD
SCOTTSDALE, ARIZONA

PROJECT NO.:	2098
SCALE:	PER PLAN
DRAWN BY:	MLC
CHECKED BY:	MJC
DATE:	10-10-2016
DWG:	2098-C-GP-Prof

C-22
OF
27

3299CGRSBM

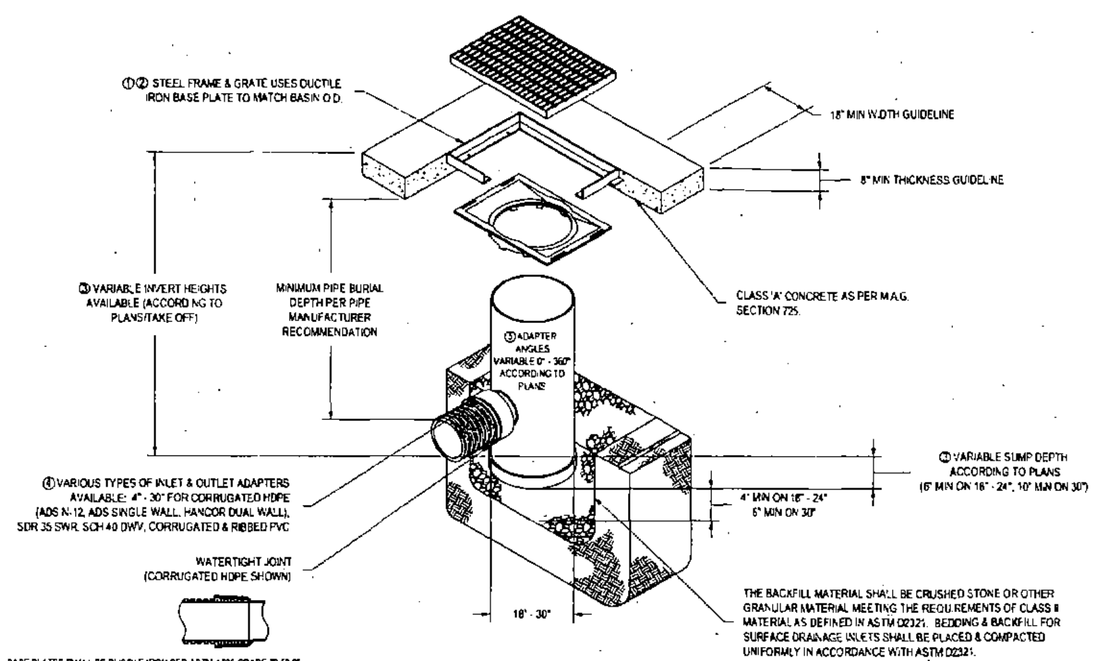
APPROX. GRATE DRAIN AREA = 761.18 SQ IN
*APPROX. WEIGHT WITH FRAME = 354.00 LBS



ALL DIMENSIONS IN INCHES UNLESS NOTED OTHERWISE
GRATE MEETS H-20 LOAD RATING
QUALITY: FRAME & GRATE MATERIALS SHALL CONFORM TO ASTM A-36 STEEL. BASE PLATE MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05 DUCTILE IRON
LOCKING DEVICE AVAILABLE UPON REQUEST SEE DRAWING NO. 7001-110-257

THIS PRINT DISCLOSES SUBJECT MATTER IN WHICH NYLOPLAST HAS PROPRIETARY RIGHTS. THE RECEIPT OR POSSESSION OF THIS PRINT DOES NOT CONFER, TRANSFER, OR LICENSE THE USE OF THE DESIGN OR TECHNICAL INFORMATION SHOWN HEREIN. REPRODUCTION OF THIS PRINT OR ANY INFORMATION CONTAINED HEREIN, OR MANUFACTURE OF ANY ARTICLE HEREFROM, FOR THE DISCLOSURE TO OTHERS IS FORBIDDEN, EXCEPT BY SPECIFIC WRITTEN PERMISSION FROM NYLOPLAST.	DRAWN BY CJA	MATERIAL		Nyloplast	3130 VERONA AVE BUFORD, GA 30518 PHN (770) 932-2443 FAX (770) 932-2490 www.nyloplast-us.com
	DATE 2-28-03				
	APPD BY CJA	PROJECT NO./NAME		TITLE 2 FT X 3 FT MAG STYLE STEEL BAR GRATE ASSEMBLY	
	DATE 2-28-03				
	DWG SIZE A	SCALE 1:10	SHEET 1 OF 1	DWG NO. 7001-110-118	REV D

NYLOPLAST DRAIN BASIN WITH 2X3 MAG STYLE GRATE: 3299CGRSBM



① - BASE PLATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
② - FRAMES & GRATES SHALL BE STEEL PER ASTM A36 & SHALL MEET H-20 LOAD RATING
③ - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS
④ - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC
⑤ - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012, 7001-110-013, & 7001-110-014

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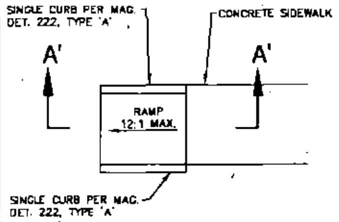
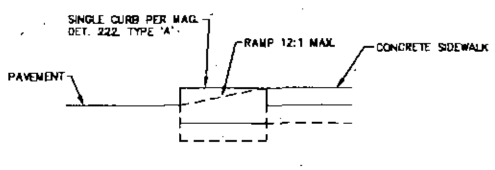
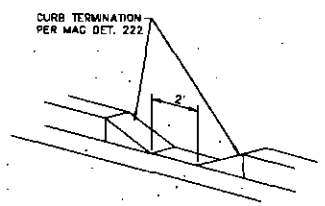
	DATE 5-16-08				
	APPD BY EBC	PROJECT NO./NAME		TITLE DRAIN BASIN WITH 2X3 MAG STYLE GRATE QUICK SPEC INSTALLATION DETAIL	
	DATE 5-16-08				
	DWG SIZE A	SCALE 1:40	SHEET 1 OF 1	DWG NO. 7001-110-321	REV A



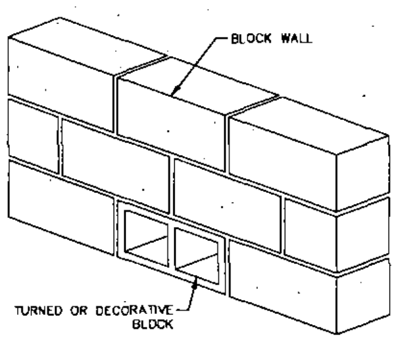
RAMP DETAIL
N.T.S.



RAMP DETAIL SECTION A'-A'
N.T.S.



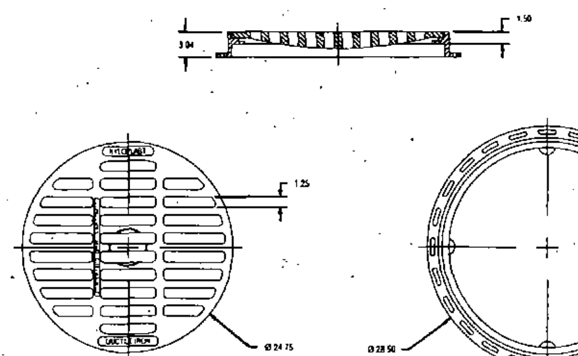
CURB OPENING DETAIL
N.T.S.



WALL OPENING DETAIL
N.T.S.

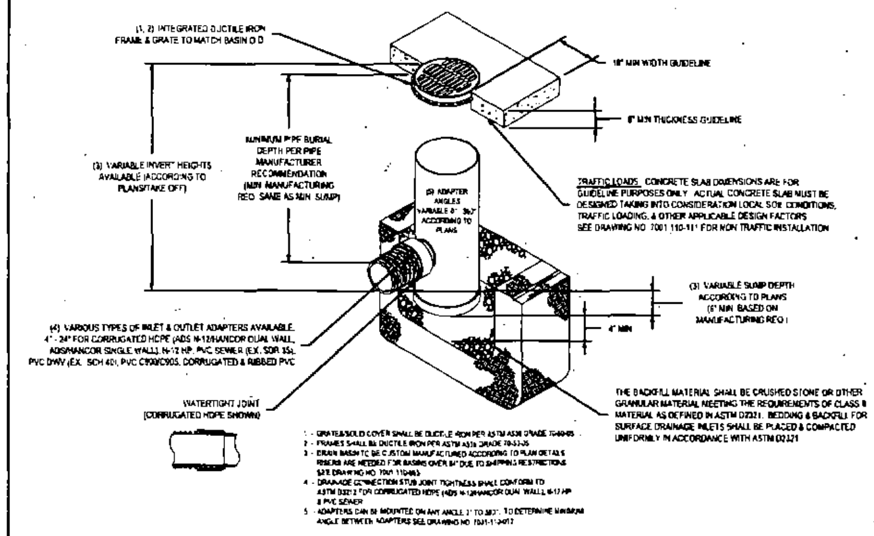
2499CGS

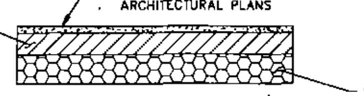
APPROX. DRAIN AREA = 194.63 SQ IN
APPROX. WEIGHT WITH FRAME = 124.00 LBS



DIMENSIONS ARE FOR REFERENCE ONLY
ACTUAL DIMENSIONS MAY VARY
DIMENSIONS ARE IN INCHES
GRATE MEETS H-20 LOAD RATING
QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT
LOCKING DEVICE AVAILABLE UPON REQUEST SEE DRAWING NO. 7001-110-024

NYLOPLAST 24" DRAIN BASIN: 2824AG _ _X





DECOMPOSED GRANITE FIRE LANE SECTION
N.T.S.

PRELIMINARY NOT FOR CONSTRUCTION

Contact Arizona 811 at least two full working days before you begin excavation
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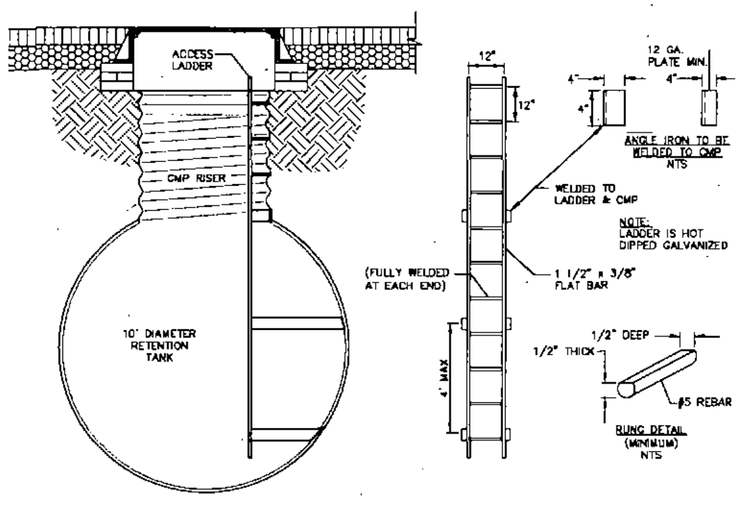
DETAILS

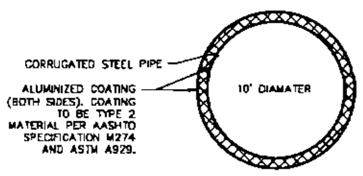
SENIOR LIVING FACILITY
23733 N. SCOTTSDALE ROAD
SCOTTSDALE, ARIZONA

Registered Professional Engineer, Certificate No. 25980, MICHAEL JAMES CAYLOR, Arizona, U.S.A.
EXPIRES 3-31-2019

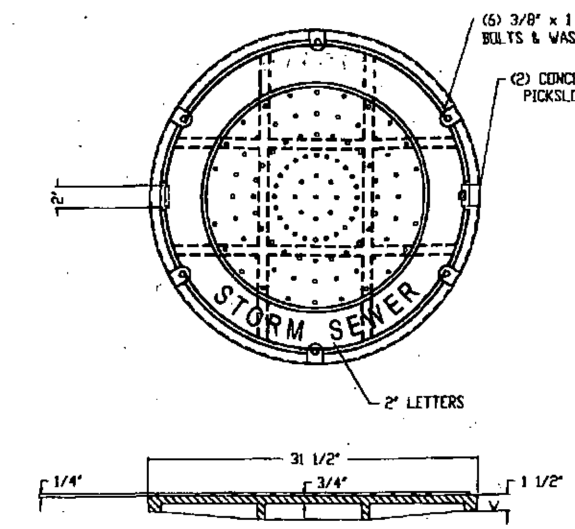
PROJECT NO.: 2098
SCALE: PER PLAN
DRAWN BY: WLG
CHECKED BY: MJC
DATE: 10-10-2016
DWG: 2098-C-GP-DTL



TYPICAL LADDER DETAIL FOR MANHOLES/RETENTION TANK
N.T.S.



N.T.S.
PIPE LINING/COATING DETAIL

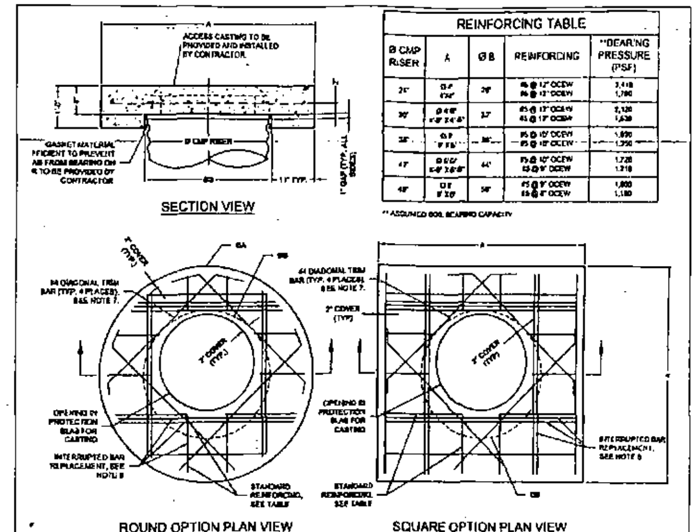


NOTE :
1. FURNISHED WITH MACHINED SURFACE.

MATERIAL: CAST GRAY IRON CLASS 35B	ASTM A48-94a	
FINISH: NO PAINT		
WEIGHT: COVER 210 LBS.		

Deeter Foundry, Inc.
LINCOLN, NEBRASKA 68529
1296 MANHOLE COVER
16 JULY 01

BOLTED DOWN COVER DETAIL FOR UNDERGROUND STORAGE ACCESSS
N.T.S.



MANHOLE CAP DETAIL
SCALE: N.T.S.

CONTECH CMP DETENTION SYSTEMS
Ø88" CMP DETENTION SYSTEM
SITE DESIGNATION: UDS

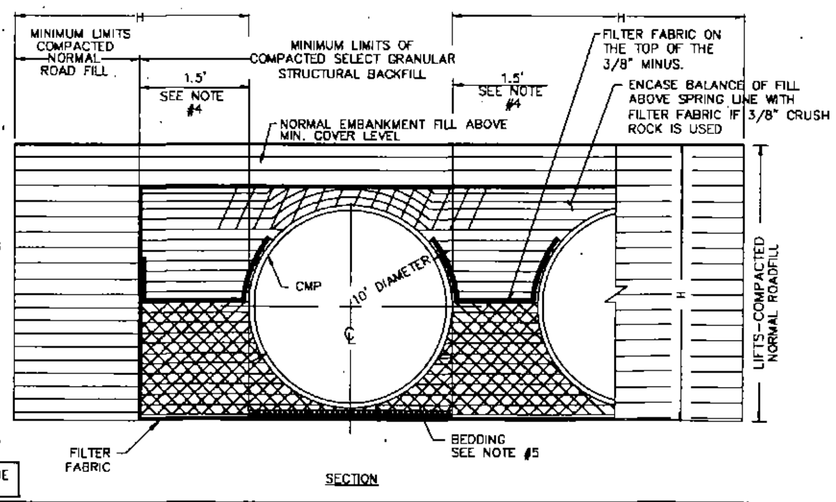
GALVANIZED BACKFILL DETAIL

GRANULAR BEDDING MATERIAL TO BE 3/8" MINUS CRUSH ROCK POURED IN PLACE.

INITIAL LIFTS OVER CROWN OF STRUCTURE AS INDICATED BY SHADED AREA TO BE COMPACTED TO REQUIRED DENSITY WITH HAND OPERATED EQUIPMENT OR WITH SMALL TRACTOR (D-4 OR SMALLER) DRAWN EQUIPMENT.

BACKFILL LIMITS.
BACKFILL MATERIAL TO BE 3/8" MINUS CRUSHED ROCK POURED IN PLACE.

NOTES:
1. BEDDING MATERIAL TO BE 3/8" MINUS CRUSH ROCK POURED IN PLACE.
2. COMPLETE AND REGULAR MONITORING OF THE CSP SHAPE IS NECESSARY DURING ALL BACK FILLING OF THE STRUCTURE.
3. PREVENT EXCESSIVE DISTORTION OF SHAPE AS NECESSARY BY VARYING COMPACTION METHODS AND EQUIPMENT.
4. SEE SECTION DETAIL FOR BACKFILL DISTANCE.
5. BEDDING ZONE SHOULD BE FREE OF DEBRIS. PLACE BEDDING MATERIAL AT MIN. THICKNESS EQUAL TO TWICE THE CORRUGATION DEPTH.
6. EMBANKMENT WIDTH H TO BE SUCH THAT A STABLE EMBANKMENT CAPABLE OF RESISTING SIDE PRESSURES FROM CMP PIPE-ARCH SHAPE WILL BE MAINTAINED THROUGHOUT THE LIFE OF INSTALLATION. THIS WIDTH TO BE DETERMINED BY THE PROJECT ENGINEER.
7. SEPARATION FILTER FABRIC SHALL BE NON-WOVEN, MODERATE SURVIVABILITY SUCH AS MIRAFI 160N, US FABRICS US 160NW, CARTHAGE MILLS FX-50HS, OR APPROVED EQUAL.
8. DEVELOPER TO PROVIDE SPECIAL INSPECTION OF THE UNDERGROUND RETENTION SYSTEM AND PROVIDE APPROVED REPORT TO CITY OF SCOTTSDALE ENGINEERING DEPARTMENT AND SITE CONSULTANTS INC.



SECTION

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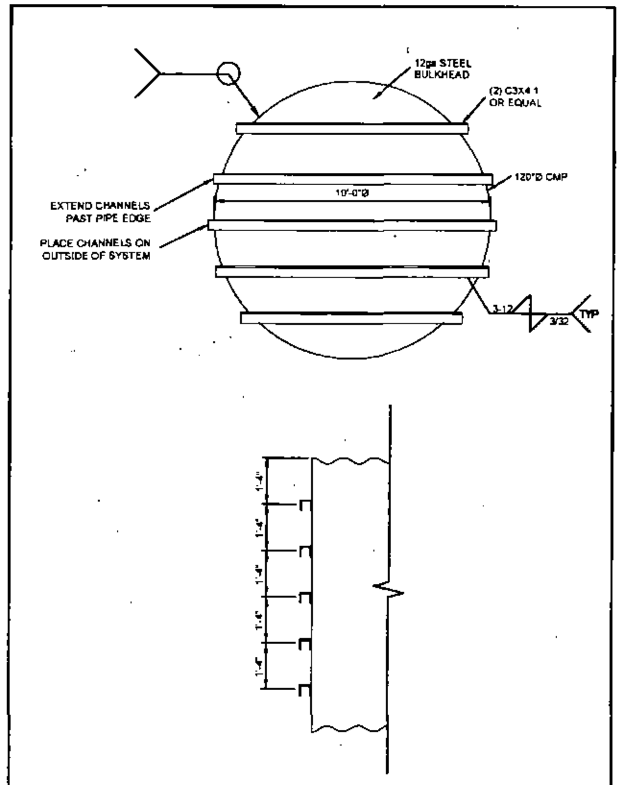
CORRUGATED METAL PIPE TYPICAL BACKFILL SECTION

UNDERGROUND RETENTION TANK INSTALLATION NOTE:
THE INSTALLATION OF CORRUGATED METAL PIPE WITH ALUMINUM COATING FOR UNDERGROUND RETENTION TANK SYSTEM SHALL BE IN ACCORDANCE WITH MAG SPECIFICATION No. 621. EXCAVATION, BEDDING, AND BACKFILL SHALL BE IN ACCORDANCE WITH MAG SPECIFICATION No. 601 AND THE MATERIAL PER MAG SPECIFICATION No. 760.



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DETAIL
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25950 MICHAEL JAMES CAYLOR
EXPIRES 3-31-2019

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PRELIMINARY DETAIL PLAN
SENIOR LIVING FACILITY
23733 N. SCOTTSDALE ROAD
SCOTTSDALE, ARIZONA

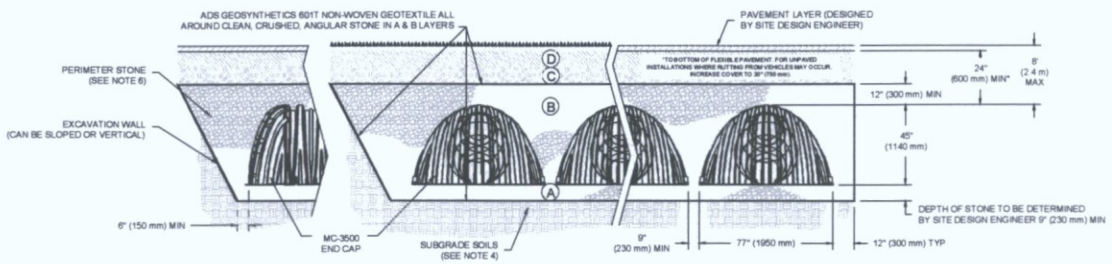
PROJECT NO.: 2098
SCALE: 1" = 10'
DRAWN BY: WLG
CHECKED BY: MJC
DATE: 10-10-2016
DWG: 2098-C-DD-Pre

C-25
OF
27

ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. [2,3]

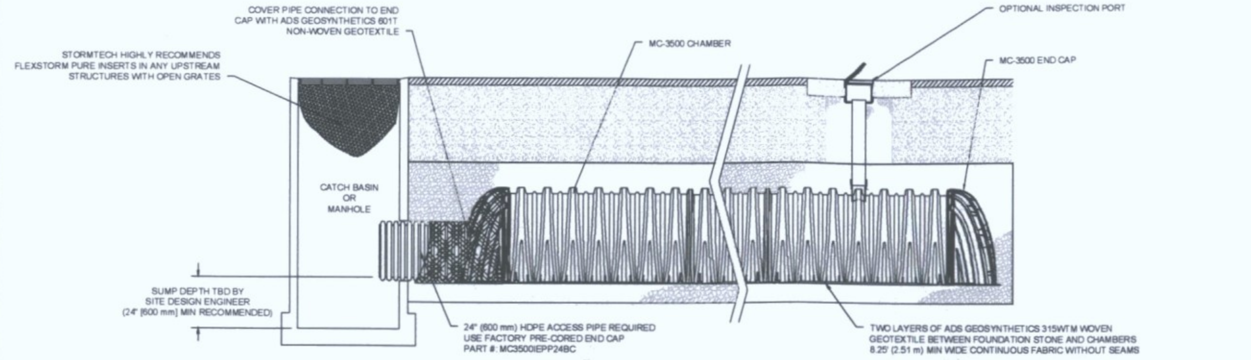
PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



NOTES:

1. MC-3500 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

MC-3500 STANDARD CROSS SECTION — ADS StormTech — 4640 TRUEMAN BLVD, HILLIARD, OH 43026, 1-800-733-7473 — SHEET 1 OF 1



MC-3500 ISOLATOR ROW DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1 REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2 REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3 USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4 LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5 IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROWS
  - B.1 REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
  - B.2 USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3 IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

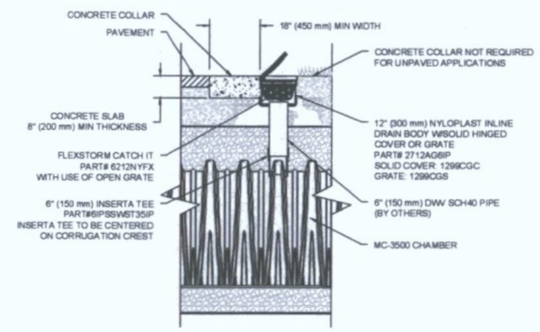
STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

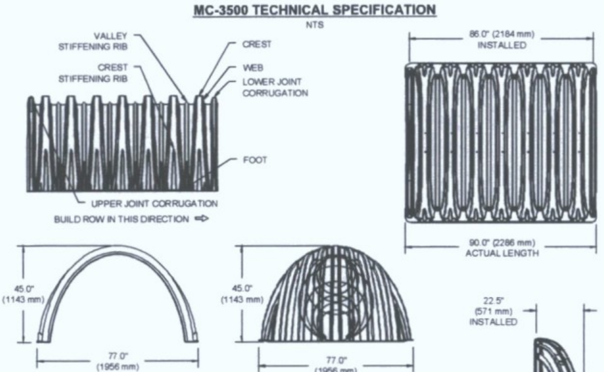
1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



MC-3500 6" INSPECTION PORT DETAIL
NTS

MC-3500 ISOLATOR ROW DETAILS — ADS StormTech — 4640 TRUEMAN BLVD, HILLIARD, OH 43026, 1-800-733-7473 — SHEET 1 OF 1

MC-3500 TECHNICAL SPECIFICATION
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	77.0" X 45.0" X 86.0"	(1956 mm X 1143 mm X 2184 mm)
CHAMBER STORAGE	109.9 CUBIC FEET	(3.11 m³)
MINIMUM INSTALLED STORAGE*	178.9 CUBIC FEET	(5.06 m³)
WEIGHT	135.0 lbs.	(61.2 kg)

NOMINAL END CAP SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	77.0" X 45.0" X 22.5"	(1956 mm X 1143 mm X 571 mm)
END CAP STORAGE	14.9 CUBIC FEET	(0.42 m³)
MINIMUM INSTALLED STORAGE*	46.0 CUBIC FEET	(1.30 m³)
WEIGHT	50.0 lbs.	(22.7 kg)

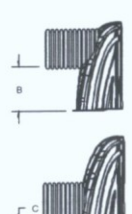
*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

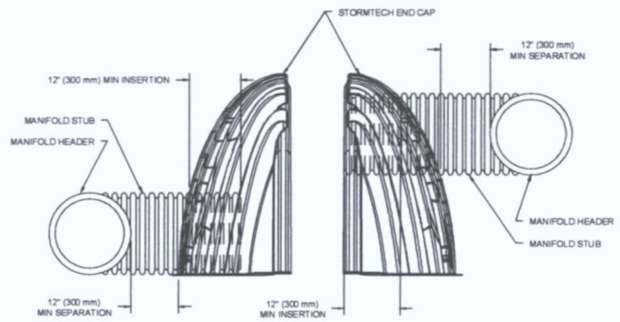
PART #	STUB	B	C
MC3500IEPP06T	6" (150 mm)	33.21" (844 mm)	---
MC3500IEPP06B		---	0.66" (17 mm)
MC3500IEPP08T	8" (200 mm)	31.16" (791 mm)	---
MC3500IEPP08B		---	0.81" (21 mm)
MC3500IEPP10T	10" (250 mm)	29.04" (738 mm)	---
MC3500IEPP10B		---	0.93" (24 mm)
MC3500IEPP12T	12" (300 mm)	26.36" (670 mm)	---
MC3500IEPP12B		---	1.35" (34 mm)
MC3500IEPP15T	15" (375 mm)	23.39" (594 mm)	---
MC3500IEPP15B		---	1.50" (38 mm)
MC3500IEPP18TC	18" (450 mm)	20.03" (509 mm)	---
MC3500IEPP18BC		---	1.77" (45 mm)
MC3500IEPP24TC	24" (600 mm)	14.48" (368 mm)	---
MC3500IEPP24BC		---	2.06" (52 mm)
MC3500IEPP30BC	30" (750 mm)	---	

NOTE: ALL DIMENSIONS ARE NOMINAL

CUSTOM PRECORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS.
CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm).
THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHTEST POSSIBLE FOR THE PIPE SIZE.



MC-SERIES END CAP INSERTION DETAIL
NTS



NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

StormTech — Detention • Retention • Recharge — Subsurface Stormwater Management™

MC-3500 Site Calculator

Project Information: 2098
Project Name: Senior Living Scottsdale
Location: Scottsdale AZ
Date: 9/20/2016
Engineer: Michael J. Caylor
StormTech RPM:

System Requirements

Units		Imperial	
Required Storage Volume		1256	CF
Stone Porosity (Industry Standard = 40%)		40	%
Stone Above Chambers	(12 inch min.)	12	inches
Stone Foundation Depth	(9 inch min.)	9	inches
Average Cover over Chambers	(24 inch min.)	36	inches
Bed size controlled by WIDTH or LENGTH?		WIDTH	
Limiting WIDTH or LENGTH dimension		14	feet
Storage Volume per Chamber		178.9	CF
Storage Volume per End Cap		46.9	CF

System Sizing

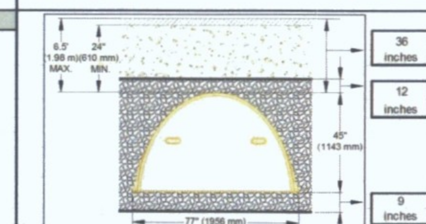
Number of Chambers Required	7	each
Number of End Caps Required	2	each
Bed Size (including perimeter stone)	462	square feet
Stone Required (including perimeter stone)	90	tons
Volume of Excavation	128	cubic yards
Non-woven Filter Fabric Required (20% Safety Factor)	216	square yards
Length of Isolator Row	54.9	feet
Non-woven Isolator Row Fabric (20% Safety Factor)	95	square yards
Woven Isolator Row Fabric (20% Safety Factor)	121	square yards
Installed Storage Volume	1,346	cubic feet

Controlled by Width (Rows)

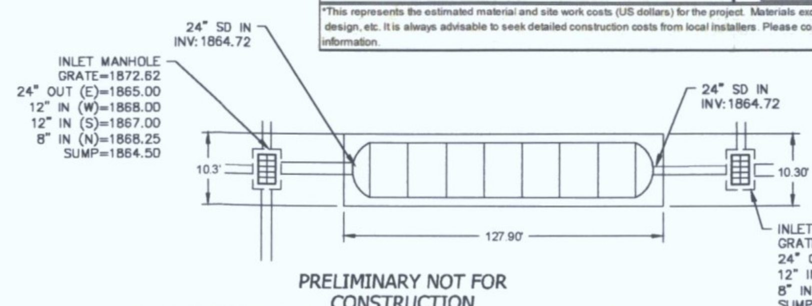
Maximum Width = 14 feet

1 row of 7 chambers

Maximum Length = 54.9 feet
Maximum Width = 8.4 feet



*This represents the estimated material and site work costs (US dollars) for the project. Materials excluded from this estimate are conveyance pipe, pavement design, etc. It is always advisable to seek detailed construction costs from local installers. Please contact STORMTECH at 888-892-2694 for additional cost information.



7 MC-3500 CHAMBERS
2 MC-3500 END CAPS
12" OF STONE ABOVE CHAMBERS
9" OF STONE BELOW CHAMBERS
TOP OF STONE = 1869.30
TOP OF CHAMBER = 1868.30
BOTTOM OF CHAMBER = 1864.55
BOTTOM OF STONE = 1863.80

PRELIMINARY NOT FOR CONSTRUCTION

Contact Arizona 811 at least two full working days before you begin excavation — Call 811 or click Arizona811.com

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Registered Professional Engineer — 25960 — MICHAEL JAMES CAYLOR — ARIZONA, U.S.A. — EXPIRES 3-31-2019

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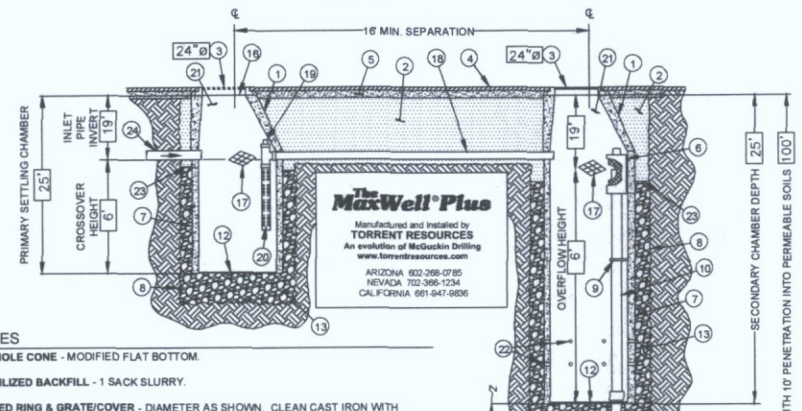
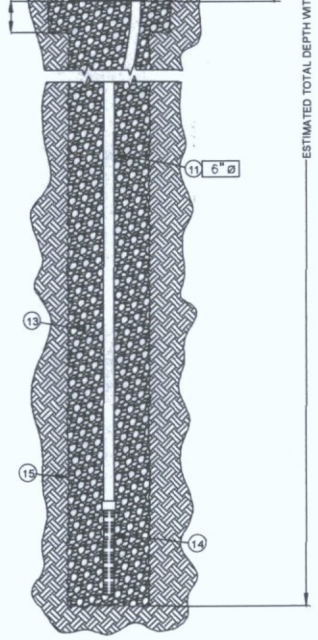
PRELIMINARY DETAIL PLAN
SENIOR LIVING FACILITY
23733 N. SCOTTSDALE ROAD
SCOTTSDALE, ARIZONA

PROJECT NO.:	2098
SCALE:	1" = 10'
DRAWN BY:	WLG
CHECKED BY:	MJC
DATE:	10-10-2016
DWG:	2098-C-GD-Pre

The MaxWell® Plus Drainage System Detail And Specifications

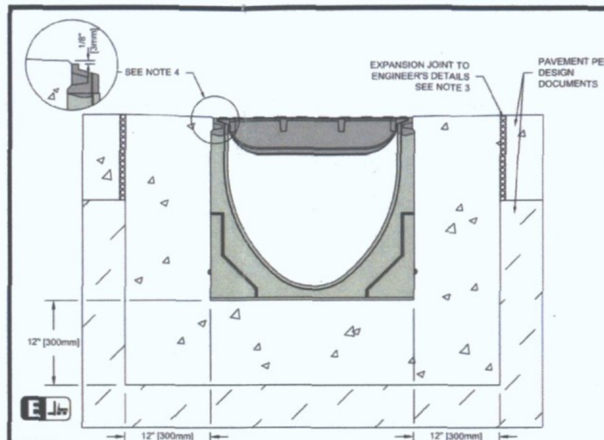




NOTES

1. **MANHOLE CONE** - MODIFIED FLAT BOTTOM.
2. **STABILIZED BACKFILL** - 1 SACK SLURRY.
3. **BOLTED RING & GRATE/COVER** - DIAMETER AS SHOWN. CLEAN CAST IRON WITH WORDING "STORM WATER ONLY" IN RAISED LETTERS. BOLTED IN 2 LOCATIONS AND SECURED TO CONE WITH MORTAR. RIM ELEVATION ±0.02' OF PLANS.
4. **GRADED BASIN OR PAVING** (BY OTHERS).
5. **COMPACTED BASE MATERIAL** (BY OTHERS).
6. **PUREFLO® DEBRIS SHIELD** - ROLLED 16 GA. STEEL X 24" LENGTH WITH VENTED ANTI-SIPHON AND INTERNAL .265" MAX. SWO FLATTENED EXPANDED STEEL SCREEN X 12" LENGTH. **FUSION BONDED EPOXY COATED.**
7. **PRE-CAST LINER** - 4000 PSI CONCRETE 48" ID. X 54" OD. **CENTER IN HOLE** AND ALIGN SECTIONS TO **MAXIMIZE BEARING SURFACE**.
8. **MIN. 6' Ø DRILLED SHAFT.**
9. **SUPPORT BRACKET** - FORMED 12 GA. STEEL. **FUSION BONDED EPOXY COATED**.
10. **OVERFLOW PIPE** - SCH. 40 PVC MATED TO DRAINAGE PIPE AT BASE SEAL.
11. **DRAINAGE PIPE** - ADS HIGHWAY GRADE WITH TRI-A COUPLER. **SUSPEND PIPE** DURING BACKFILL OPERATIONS TO PREVENT BUCKLING OR BREAKAGE. DIAMETER AS NOTED.
12. **BASE SEAL** - GEOTEXTILE OR CONCRETE SLURRY.
13. **ROCK** - WASHED, SIZED BETWEEN 3/8" AND 1-1/2" TO **BEST COMPLEMENT SOIL CONDITIONS**.
14. **FLOFAST® DRAINAGE SCREEN** - SCH. 40 PVC 0.120" SLOTTED WELL SCREEN WITH 32 SLOTS PER ROW/FT. DIAMETER VARIES 120" OVERALL LENGTH WITH TRI-B COUPLER.
15. **MIN. 4' Ø SHAFT** - DRILLED TO **MAINTAIN PERMEABILITY** OF DRAINAGE SOILS.
16. **FABRIC SEAL** - U.V. RESISTANT GEOTEXTILE - **TO BE REMOVED BY CUSTOMER** AT PROJECT COMPLETION.
17. **ABSORBENT** - HYDROPHOBIC PETROCHEMICAL SPONGE. MIN. 128 OZ. CAPACITY.
18. **CONNECTOR PIPE** - 4" Ø SCH. 40 PVC .
19. **ANTI-SIPHON VENT** WITH FLOW REGULATOR.
20. **INTAKE SCREEN** - SCH. 40 PVC 0.120" MODIFIED SLOTTED WELL SCREEN WITH 32 SLOTS PER ROW/FT. 48" OVERALL LENGTH WITH TRI-C END CAP.
21. **FREEBOARD DEPTH VARIES** WITH INLET PIPE ELEVATION. INCREASE PRIMARY/SECONDARY SETTLING CHAMBER DEPTHS AS NEEDED TO MAINTAIN ALL INLET PIPE ELEVATIONS ABOVE CONNECTOR PIPE OVERFLOW.
22. **EIGHT (8) PERFORATIONS PER FOOT**, 2 ROWS MIN.
23. **MOISTURE MEMBRANE** - 6 MIL. PLASTIC. PLACE SECURELY AGAINST ECCENTRIC CONE AND HOLE SIDEWALL. USED IN LIEU OF SLURRY IN LANDSCAPED AREAS.
24. **INLET PIPE** (BY OTHERS).

AZ MAXWELL PLUS



NOTES:

1. IT IS NECESSARY TO ENSURE MINIMUM DIMENSIONS SHOWN ARE SUITABLE FOR EXISTING GROUND CONDITIONS. *ENGINEERING ADVICE MAY BE REQUIRED.*
2. MINIMUM CONCRETE STRENGTH OF 4,000 PSI IS RECOMMENDED. CONCRETE SHOULD BE VIBRATED TO ELIMINATE AIR POCKETS.
3. EXPANSION AND CONTRACTION CONTROL JOINTS AND REINFORCEMENT ARE RECOMMENDED TO PROTECT CHANNEL AND CONCRETE SURROUND. *ENGINEERING ADVICE MAY BE REQUIRED.*
4. THE FINISHED LEVEL OF THE CONCRETE SURROUND MUST BE APPROX 1/8" [3mm] ABOVE THE TOP OF THE CHANNEL EDGE.
5. CONCRETE BASE THICKNESS SHOULD MATCH SLAB THICKNESS. ENGINEERING ADVICE MAY BE REQUIRED TO DETERMINE PROPER LOAD CLASS.
6. *REFER TO ACO'S LATEST INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS.*

SPECIFICATION CLAUSE

S300K POWERDRAIN - LOAD CLASS E

GENERAL
THE SURFACE DRAINAGE SYSTEM SHALL BE POLYMER CONCRETE S300K CHANNEL SYSTEM WITH DUCTILE IRON EDGE RAILS AS MANUFACTURED BY ACO POLYMER PRODUCTS, INC.

MATERIALS
CHANNELS SHALL BE MANUFACTURED FROM POLYESTER RESIN POLYMER CONCRETE WITH AN INTEGRALLY CAST-IN DUCTILE IRON EDGE RAIL. MINIMUM PROPERTIES OF POLYMER CONCRETE WILL BE AS FOLLOWS:

COMPRESSIVE STRENGTH:	14,000 PSI
FLEXURAL STRENGTH:	4,000 PSI
TENSILE STRENGTH:	1,500 PSI
WATER ABSORPTION:	0.07%
FROST PROOF	YES
DILUTE ACID AND ALKALI RESISTANT	YES
B117 SALT SPRAY TEST COMPLIANT	YES

THE SYSTEM SHALL BE 12" (300mm) NOMINAL INTERNAL WIDTH WITH A 14.2" (390mm) OVERALL WIDTH AND A BUILT-IN SLOPE OF 0.5%. CHANNEL INVERT SHALL HAVE DEVELOPED "V" SHAPE. ALL CHANNELS SHALL BE INTERLOCKING WITH A MALE/FEMALE JOINT.

THE COMPLETE DRAINAGE SYSTEM SHALL BE BY ACO POLYMER PRODUCTS, INC. ANY DEVIATION OR PARTIAL SYSTEM DESIGN AND/OR IMPROPER INSTALLATION WILL VOID ANY AND ALL WARRANTIES PROVIDED BY ACO POLYMER PRODUCTS, INC.

CHANNEL SHALL WITHSTAND LOADING TO PROPER LOAD CLASS AS OUTLINED BY EN 1433. GRATE TYPE SHALL BE APPROPRIATE TO MEET THE SYSTEM LOAD CLASS SPECIFIED AND INTENDED APPLICATION. GRATES SHALL BE SECURED USING 'POWERLOK' BOLTLESS LOCKING SYSTEM. CHANNEL AND GRATE SHALL BE CERTIFIED TO MEET THE SPECIFIED EN 1433 LOAD CLASS. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

SK3-E-ECP	S300K - POWERDRAIN - LOAD CLASS: E Exposed Concrete Pavement	ACO Polymer Products, Inc.		
DATE: 06/03/15	INSTALLATION DRAWING - ACO DRAIN	825 W. Beechcraft St Casa Grande, AZ 85122 Tel: 520-421-9988 Fax: 520-421-9899	9470 Pinecone Dr Mentor, OH 44060 Tel: 440-639-7231 Fax: 440-639-7235	4211 Pleasant Rd. Fort Mill, SC 29708 Tel: 440-639-7231 Fax: 803-802-1063

Arizona Tel: 888-490-9552 e-mail: sales@acousa.com Ohio Tel: 800-543-4764 www.acousa.com South Carolina Tel: 800-543-4764

PRELIMINARY NOT FOR CONSTRUCTION

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811
Call 811 or click Arizona811.com

REV.
REV.
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REV.

Registered Professional Engineer (Civil) Certificate No. 25960 MICHAEL JAMES CAYLOR Arizona, U.S.A.
EXPIRES 3-31-2019

Site Consultants, Inc.
ENGINEERS ■ SURVEYORS ■ CONSULTANTS
a division of **Westwood**
6909 East Greenway Parkway, Suite 250, Scottsdale, AZ. 85254
westwoodps.com (888) 937-5150

PRELIMINARY DETAIL PLAN
SENIOR LIVING FACILITY
23733 N. SCOTTSDALE ROAD
SCOTTSDALE, ARIZONA

PROJECT NO.:	2098
SCALE:	1" = 10'
DRAWN BY:	WLG
CHECKED BY:	MJC
DATE:	10-10-2016
DWG:	2098-C-GD-Pre

Attachment No. 18

45-45

45-44

45-46

44-45

NOTICE

THIS DOCUMENT IS PROVIDED FOR GENERAL INFORMATION PURPOSES ONLY. THE CITY OF SCOTTSDALE DOES NOT WARRANT THE ACCURACY, COMPLETENESS, OR SUITABILITY OF THIS DOCUMENT FOR ANY PARTICULAR PURPOSE. IT SHOULD NOT BE RELIED UPON WITHOUT FIELD VERIFICATION BY THE USER.

THE CITY OF SCOTTSDALE

02-SUP-2010

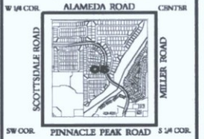
GENERAL NOTES:

- THIS IS A COMPUTER GENERATED DRAWING. FOR ANY REVISIONS PLEASE CONTACT THE SCOTTSDALE RECORDS DEPARTMENT AT (480) 312-7366.
- THE SECTION LINE BEARING AND DISTANCES ARE BASED ON THE CITY OF SCOTTSDALE GPS SURVEY OF SEPTEMBER 1991. BEARINGS ARE NAD 83 GRID. DISTANCES ARE FLATTENED TO GRID(sf). WHERE NO CORNER WAS FOUND THE DIMENSIONS ARE GIVEN TO CALCULATED SECTION CORNERS AND ARE NOTED AS "CALCULATED" ON THE MAP.

NOTES:

PHOTO DATE:
NOVEMBER 2007

VICINITY MAP



Book 212

NORTH

SCALE: 1" = 100'

0 50 100 200

Note: The map scale of 1" = 100' is based on a full size print of 30" x 36".

AERIAL

QUARTER SECTION MAP

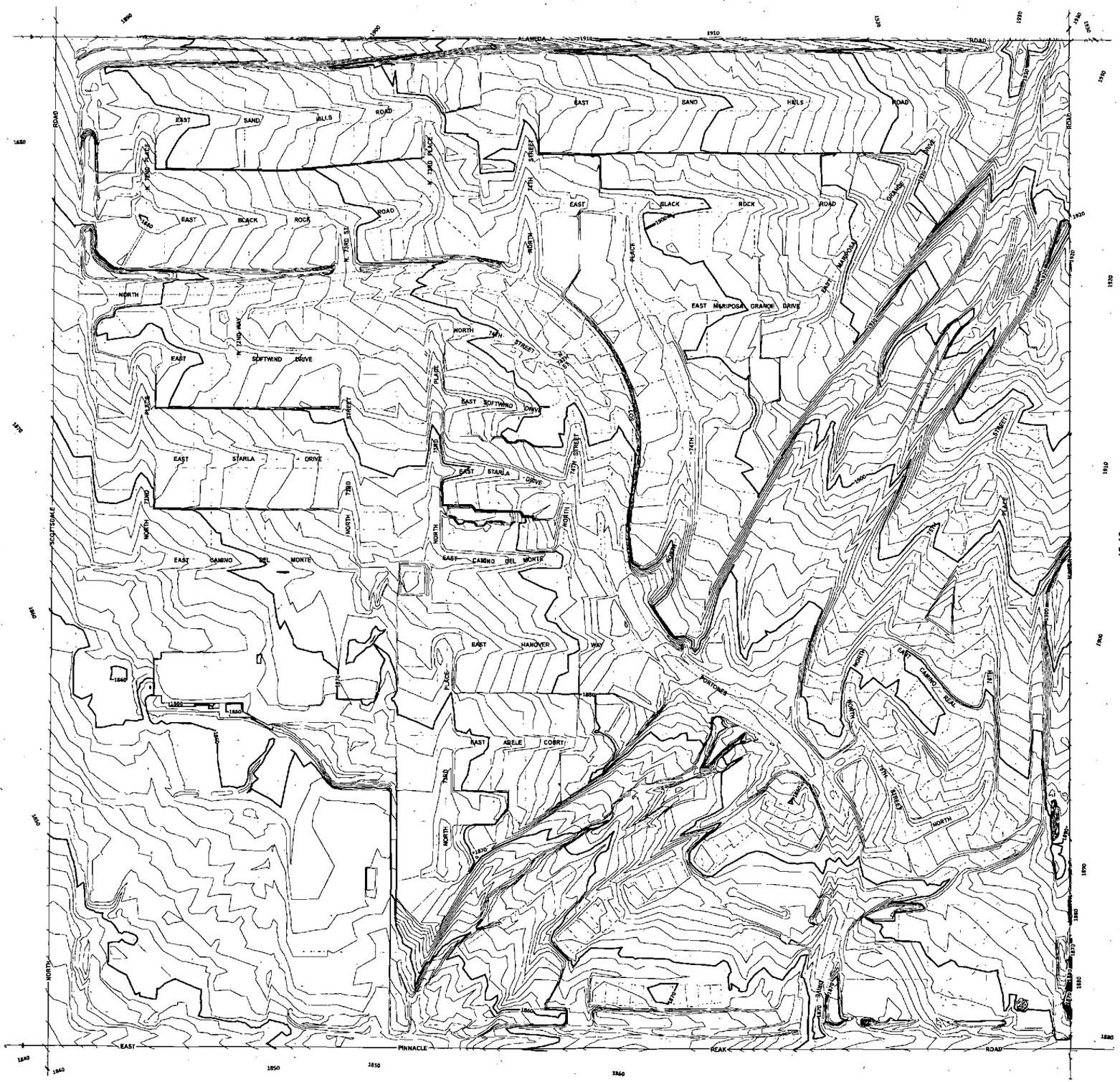
45 - 45

SW 1/4 SEC. 11 T4N R4E

SCOTTSDALE GEOGRAPHIC INFORMATION SYSTEMS
3629 North Drinkwater Boulevard
Scottsdale, Arizona 85251

Attachment No. 19

46-45



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44-45

GENERAL NOTES:

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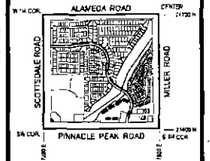
- THE SECTION LINE BEARING AND DISTANCES ARE BASED ON THE CITY OF SCOTTSDALE GPS SURVEY OF SOFTIMBER 1914. BEARINGS ARE NAD 83 GRID AND DISTANCES ARE FLATTENED TO GROUND. WHERE NO CORNER WAS FOUND THE DIMENSIONS ARE GIVEN 'TO CALCULATED SECTION CORNERS AND ARE NOTED AS 'CALCULATED' ON THE MAP.

LEGEND:

VICINITY MAP



NORTH

SCALE: 1" = 100'

0 50 100 200

The map scale of 1" = 100' is based on a full size print of 30" x 36"

CONTOUR

QUARTER SECTION MAP

45-45

SW 1/4 SEC. 11 T4N R4E

SCOTTSDALE GEOGRAPHIC INFORMATION SYSTEMS

3629 North Drinkwater Boulevard
Scottsdale, Arizona 85251

28-APR-14

Attachment No. 20

ipa INVESTMENT PROPERTY ASSOCIATES LLC

December 9, 2016

Nerijus Baronas
City of Scottsdale, Stormwater Management
7447 E. Indian School Road Suite 125
Scottsdale, AZ 85251

RE: Nature of occupancy for the "Senior Living at Scottsdale Road and Pinnacle Peak Road"
City of Scottsdale Project No. 30-DR-2016

Mr. Baronas:

Pursuant to your request this letter has been prepared to document the type of occupancy for the above referenced project.

"Senior Living at Scottsdale Road and Pinnacle Peak Road" is located at the Northeast corner of Scottsdale Road and Pinnacle Peak Road and consists of a senior living facility that includes both a memory care wing and an independent living facility with associated parking, landscape areas, pedestrian connections and amenities such as a dog park and outdoor courtyards.

"Senior Living at Scottsdale Road and Pinnacle Peak Road" will assist residents with daily living activities and basic care support in an apartment setting. The facility will offer recreational and social activities, housekeeping, linen service, apartment maintenance and transportation, while trained caregivers will provide assistance with daily tasks such as medication. Staff will coordinate services with outside healthcare providers and monitor residents to ensure they are healthy. No nursing, surgery or emergency treatment functions will be performed at the facility.

Please don't hesitate to contact me with any questions or concerns you might have.

Sincerely,

Jean Constantine

Jean Constantine
Project Manager

1600 S. Beacon Boulevard, Suite 260
Grand Haven, Michigan 49417

www.ipapartners.com
616.846.6900

2390 Camelback Road, Suite 100
Phoenix, Arizona 85016