

DEVELOPMENT TEAM

APPLICANT / OWNER / DEVELOPER

JUDY DAVID REAL ESTATE PROJECT MANAGER HOUSING AUTHORITY OF THE COUNTY OF SAN BERNARDINO 715 E. BRIER DRIVE, SAN BERNARDINO, CA 92408 PHONE: (909) 332-6317 FAX (909) 890-4618

ARCHITECT

CHARLES PICK BASIS ARCHITECTURE AND CONSULTING INC. 2130 4TH STREET, SUITE B (MAIL: PO BOX 150539) SAN RAFAEL, CA 94901 PHONE: (415) 578-4865

SITE PLANNING / DESIGN / CIVIL

BRIAN BISNETT BISNETT DESIGN ASSOCIATES 16046 BEAR COURT GRASS VALLEY, CA 95949 PHONE: (530) 277-9733

Sheet # Sheet title

SHEET INDEX

L-0 L-1	COVER SHEET TOPOGRAPHIC SURVEY
L-2	SITE PLAN (16 SCALE)
L-3	SITE PLAN (30 SCALE)
L-4	PLANTING PLAN
L-5	IRRIGATION PLAN
L-6	IRRIGATION / PLANTING SPECIFICATIONS & DETA
L-7	CONSTRUCTION DETAILS
L-8	CONSTRUCTION DETAILS
L-9	CONSTRUCTION DETAILS
L-10	HORIZONTAL CONTROL PLAN
L-II	GRADING & DRAINAGE PLAN
L-12	EROSION CONTROL PLAN

PARCEL NOTES

0472-181-68-0-000

FLOOD ZONE 'X' PER FEMA FIRM 06071C5820J, DATED 09-02-2016, FOR THE CITY OF VICTORVILLE, IN SAN BERNARDINO COUNTY, STATE OF CALIFORNIA,

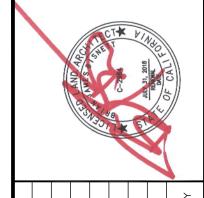
ASPHALT SLURRY SPECIFICATIONS

PARCEL AREA +/- I.34 ACRES EXISTING IMPERVIOUS AREA +/- 1.14 ACRES EXISTING PERVIOUS AREA +/- .20 ACRES PROPOSED IMPERVIOUS AREA +/- .94 ACRES PROPOSED PERVIOUS AREA +/- .40 ACRES

(35) PARKING STALLS, INCLUDING (4) HANDICAP STALLS (31) TOTAL UNITS... (24) I BEDROOM, (7) EFFICIENCY APARTMENTS

GENERAL NOTES

- ALL WORKS SHALL BE DONE IN ACCORDANCE WITH THESE PLANS, SPECIAL PROVISIONS, AND LATEST VERSION OF THE CITY OF VICTORVILLE STANDARD SPECIFICATIONS FOR PUBLIC WORKS IMPROVEMENTS, CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS, AND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
- 2. THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE CORSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTIES; THAT THIS REQUIREMENT SHALL APPLY CONTINUALLY, AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE CITY HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF THIS PROJECT.
- 3. THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER OF ANY DISCREPANCIES OR UNUSUAL CONDITIONS ON THESE PLANS, THE SPECIAL PROVISIONS BEFORE BID AND AS SOON AS THEY ARE
- 4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE HIM/HERSELF WITH THE WORK SITE AND ALL UNDERGROUND UTILITIES/FACILITIES SHOWN OR NOT SHOWN ON THESE PLANS.
- 5. THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED BY THE CITY OF VICTORVILLE AND OTHER PUBLIC AGENCIES.
- 6. THE CONTRACTOR SHALL BE HELD RESPONSIBLE ANY CHANGES MADE TO THESE PLANS AND THE SPECIAL PROVISIONS WITHOUT PRIOR WRITTEN AUTHORIZATION OF THE CITY ENGINEER.
- 7. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT SURVEYING MONUMENTS IN PLACE, AND THE CONTRACTOR SHALL BE RESPONSIBLE FINANCIALLY FOR RESETTING DAMAGED OR DESTROYED MONUMENTS.
- 8. JOSHUA TREES SHALL BE PROTECTED IN PLACE OR RELOCATED AS APPROVED BY THE PARK DIVISION OF THE CITY OF VICTORVILLE, COMMUNITY SERVICES DEPARTMENT AT THE
- 9. ACCESS TO ALL DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES EXCEPT WHEN PRECLUDED BY NECESSARY CONSTRUCTION FOR A REASONABLE PERIOD OF TIME AS APPROVED BY THE CITY
- IO. THE CONTRACTOR SHALL MAINTAIN A NEAT APPEARANCE AT THE JOB SITE. THE CONTRACTOR SHALL REMOVE ALL RUBBISH, UNUSED MATERIALS, FORMS, BROKEN CONCRETE AND ASPHALT, UNUSED CONSTRUCTION EQUIPMENT, AND PLANTS AS SOON AS PRACTICABLE DURING CONSTRUCTION UNTIL FINAL ACCEPTANCE OF THE PROJECT BY THE CITY OF VICTORVILLE.
 - CONSTRUCTION AND/OR MAINTENANCE OPERATIONS BY OTHERS MAY OCCUR CONCURRENTLY AT THE JOBSITE OR IN THE VICINITY OF THE JOBSITE. THE CONTRACTOR SHALL COOPERATE AND COORDINATE HIS/HER OPERATION WITH THE OTHER CREWS.



6-21-18

RAWING::



SURVEYOR'S STATEMENT

I. I FURTHER 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 2, 3, 4, 6a, 6b, 7a, 7b I, 7c, 8, 9, II, I3, I4, I6 AND 20 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON 8-9-17.

2. THE ACCOMPANYING SURVEY WAS MADE ON THE GROUND AND CORRECTLY SHOWS THE LOCATION OF ALL BUILDINGS, STRUCTURES AND OTHER IMPROVEMENTS SITUATED ON THE PROPERTY DESCRIBED HEREIN AND THAT THERE ARE NO VISIBLE ENCROACHMENTS ON THE SUBJECT PROPERTY OR UPON ADJACENT LAND ABUTTING SAID PROPERTY, EXCEPT AS SHOWN HEREON.

3. THE PROPERTY DESCRIBED HEREIN IS THE SAME AS THE PROPERTY DESCRIBED IN CHICAGO TITLE COMPANY ORDER NO 7101620377, DATED MARCH 20, 2017, AND THAT ALL EASEMENTS, COVENANTS, AND RESTRICTIONS REFERENCED IN SAID TITLE COMMITMENT OR APPARENT FROM PHYSICAL INSPECTION OF THE SITE OR OTHERWISE KNOWN TO ME HAVE BEEN PLOTTED HEREON OR OTHERWISE NOTED AS TO THEIR EFFECT ON THE SUBJECT PROPERTY.

4. SAID PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION 'X' BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), ON FLOOD INSURANCE RATE MAP NO. 0607IC5820J, WITH A DATE OF IDENTIFICATION OF 09-02-20IG, FOR THE CITY OF VICTORVILLE, IN SAN BERNARDINO COUNTY, STATE OF CALIFORNIA, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PROPERTY IS SITUATED.

5. THE PROPERTY DESCRIBED HEREIN HAS ACCESS VIA EASEMENT TO STODDARD WELLS ROAD, A DEDICATED PUBLIC STREET.

6. THE TOTAL NUMBER OF STRIPED PARKING SPACES ON THE PROPERTY DESCRIBED HEREIN IS 47, INCLUDING I DESIGNATED HANDICAP SPACE.

7. EXCEPT AS SHOWN HEREIN, ALL VISIBLE UTILITIES SERVING THE PROPERTY DESCRIBED HEREIN ENTER THROUGH ADJOINING PUBLIC STREETS AND/ OR EASEMENTS OF RECORD.

8. THERE ARE NO OBSERVABLE ABOVE GROUND ENCROACHMENTS (a) BY THE IMPROVEMENTS ON THE SUBJECT PROPERTY UPON ADJOINING PROPERTIES, STREETS OR ALLEY, OR (b) BY THE IMPROVEMENTS ON ADJOINING PROPERTIES, STREETS, OR ALLEYS UPON THE SUBJECT PROPERTY.

9. THERE IS NO OBSERVABLE EVIDENCE OF EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS UPON THE SUBJECT PROPERTY.

IO. ACCORDING TO LOCAL AGENCY THERE ARE NO PROPOSED CHANGES IN STREET RIGHT OF WAY LINES. THERE IS NO OBSERVABLE EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION

II. THERE IS NO OBSERVABLE EVIDENCE THAT THE SUBJECT PROPERTY IS OR HAS BEEN USED AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL.

12. THERE IS NO OBSERVABLE EVIDENCE THAT THERE ARE ANY CEMETERIES OR FAMILY BURIAL

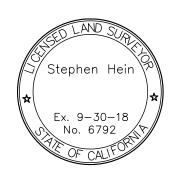
SITES ON SUBJECT PROPERTY.

13. THERE IS NO EVIDENCE OF RECORD THAT THERE ARE ANY GAPS OR GORES ON THE SUBJECT

PROPERTY.

14. PROFESSIONAL LIABILITY INSURANCE POLICY OBTAINED BY THE SURVEYOR IN THE MINIMUM AMOUNT OF \$1,000,000.00 IS IN EFFECT THROUGHOUT THE SURVEY TERM.

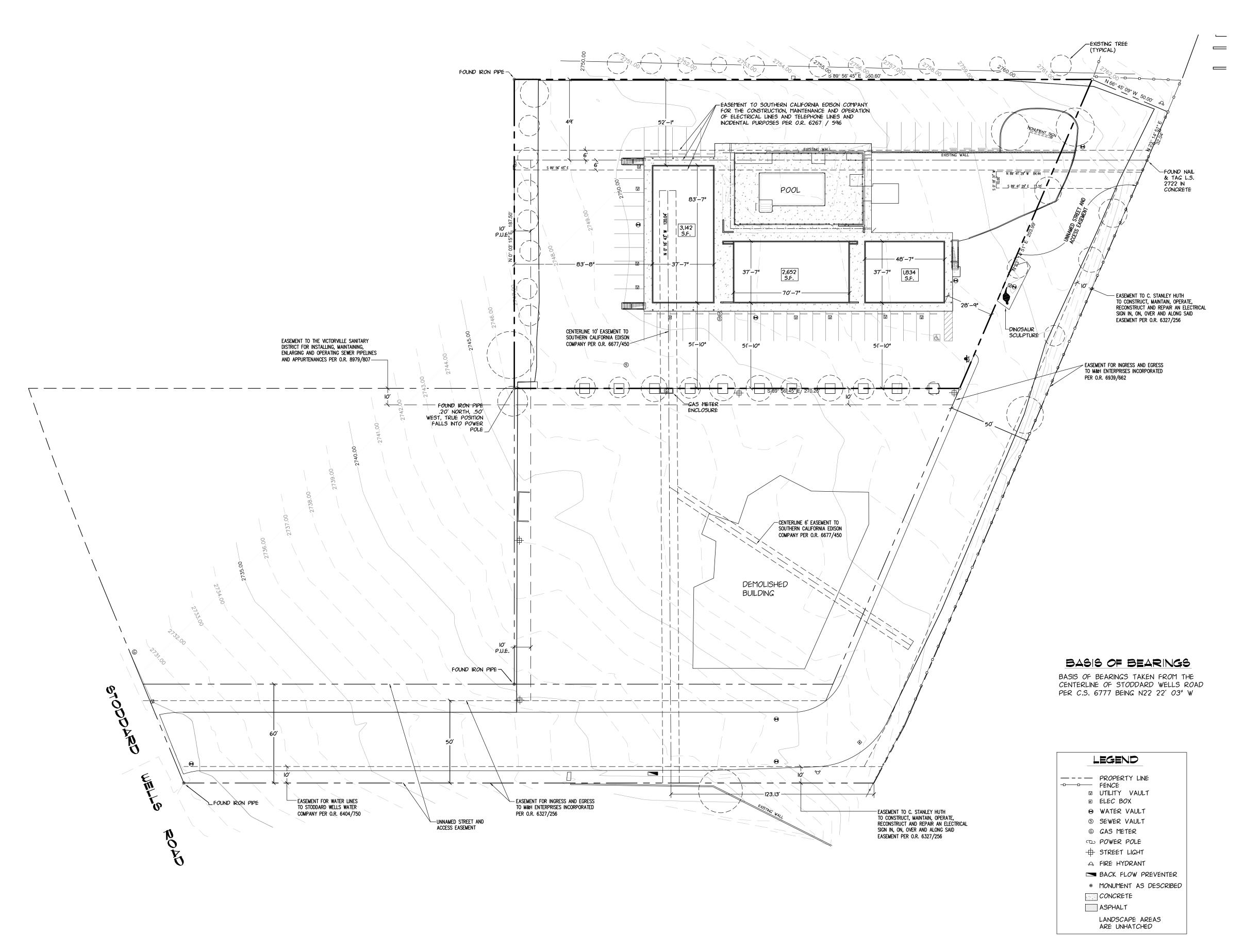
15. THERE IS NO OBSERVABLE EVIDENCE OF ANY CREEKS, STREAMS, RIVERS, LAKES, PONDS, WATERWAYS OR WETLANDS ON SUBJECT PROPERTY.



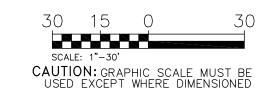
SURVEYOR	
REGISTRATION NO	
DATE: _	
JOB NO. CALIFORNIA SURVEY	CO.

136 IDAHO MARYLAND RD.

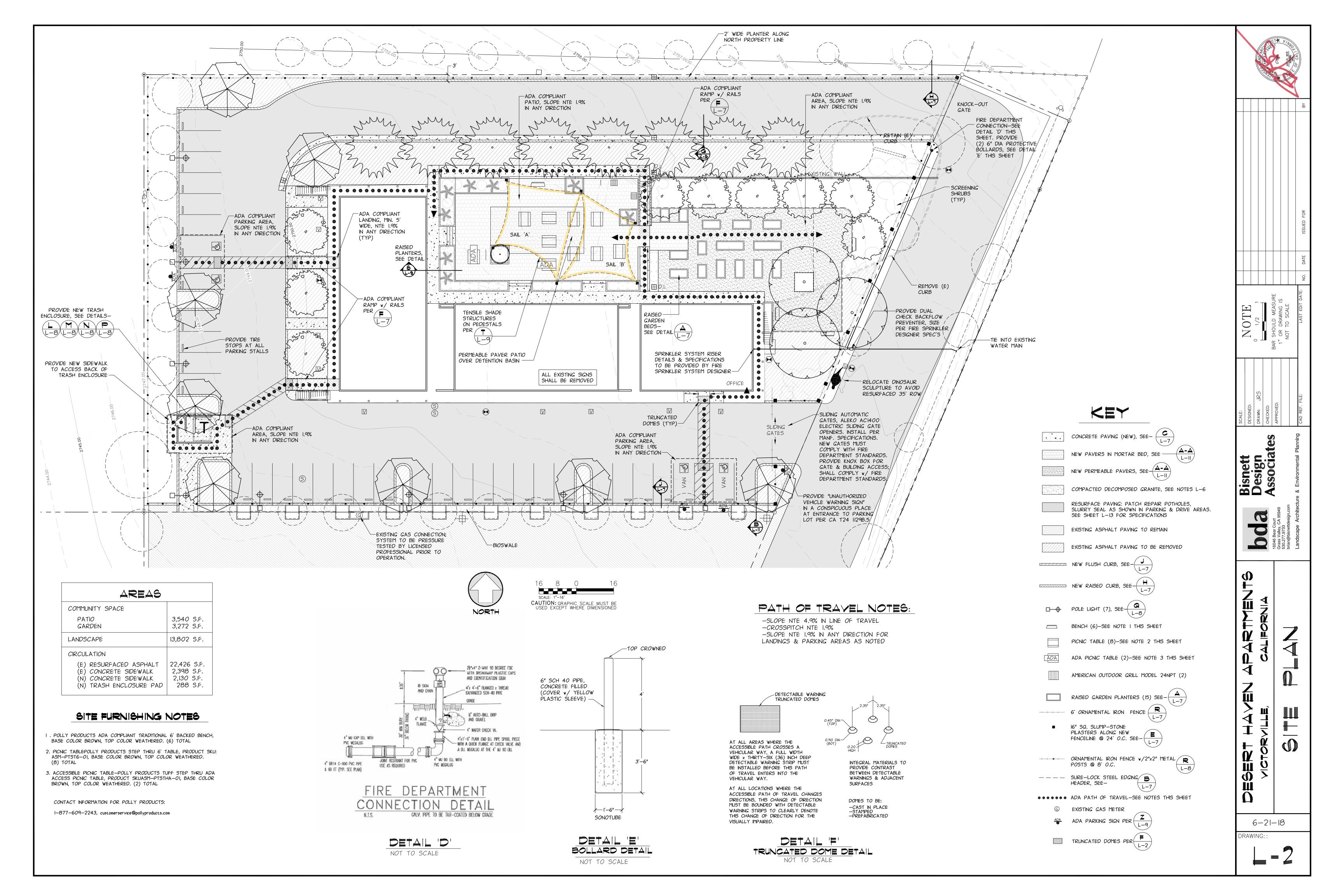
GRASS VALLEY, CA 95945 TELE (530) 273-6651

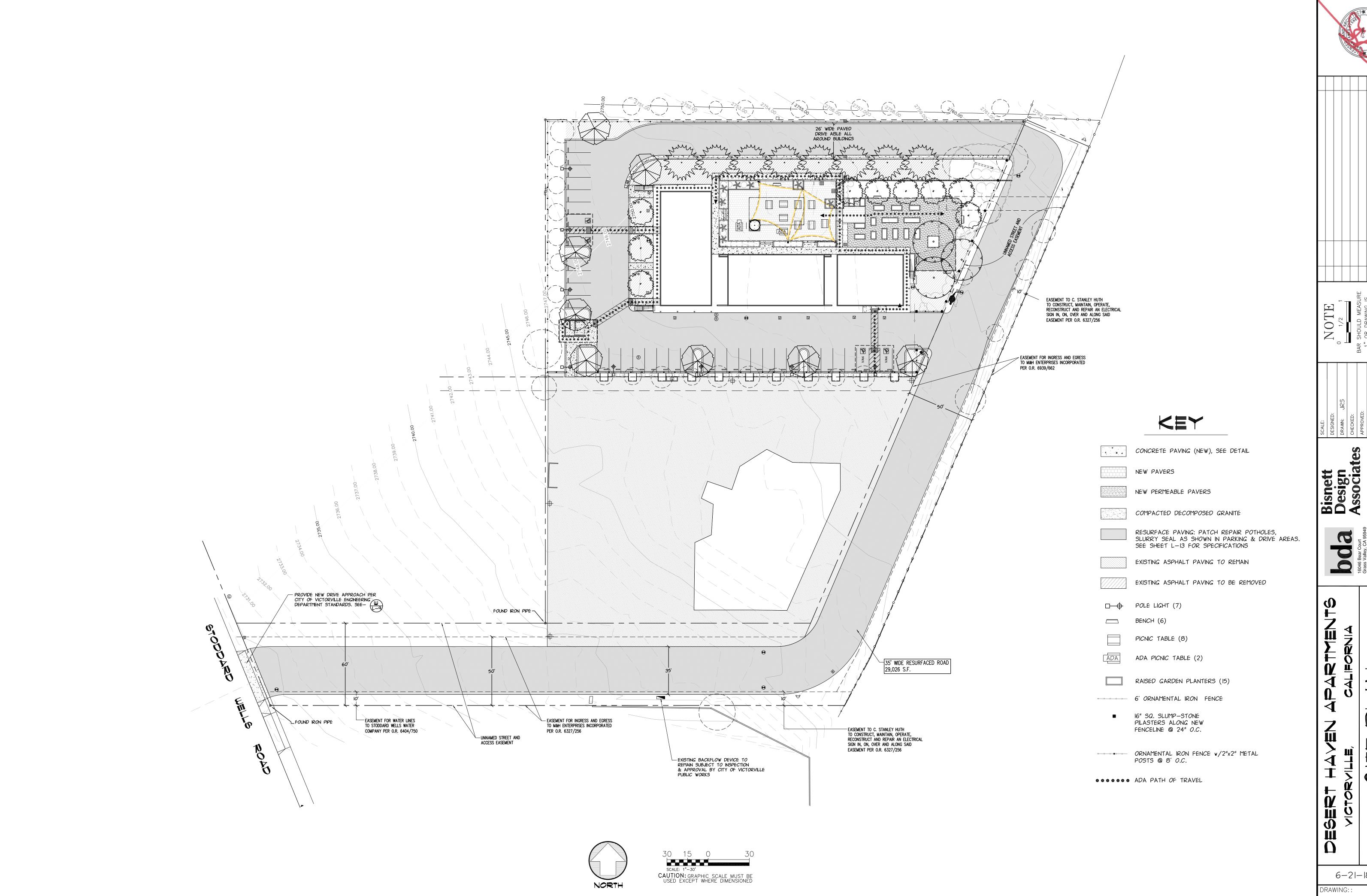






NOTE 6-21-18 DRAWING::

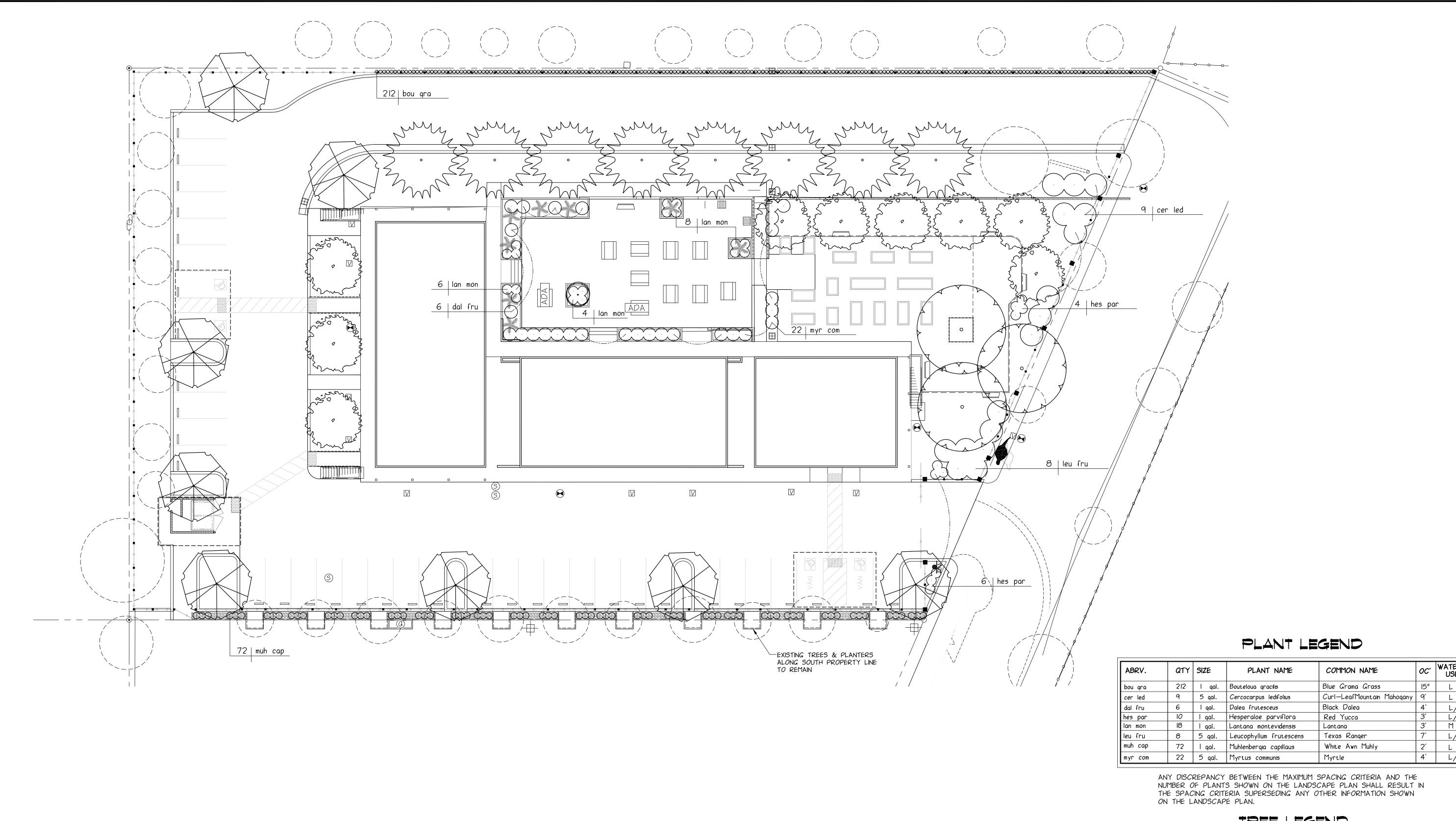




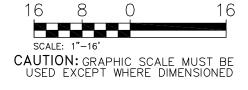


6-21-18

DRAWING::



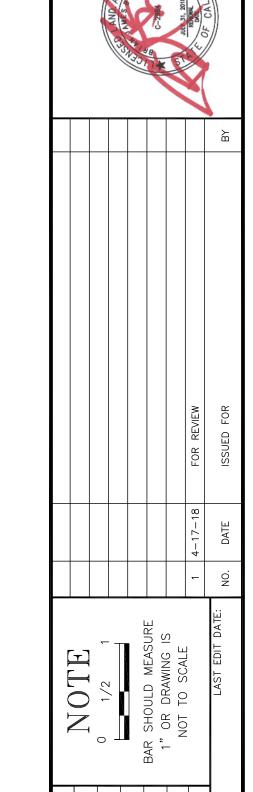




ABRV.	QTY	SIZE	PLANT NAME	COMMON NAME	oc'	WATER USE
bou gra	212	l qal.	Bouteloua gracilis	Blue Grama Grass	15"	L
cer led	9	5 qal.	Cercocarpus ledifolius	Curl-LeafMountain Mahoqany	9′	L
dal fru	6	l qal.	Dalea frutesceus	Black Dalea	4′	L/M
hes par	10	l qal.	Hesperaloe parviflora	Red Yucca	3′	L/M
lan mon	18	l qal.	Lantana montevidensis	Lantana	3′	M
leu fru	8	5 qal.	Leucophyllum frutescens	Texas Ranger	7'	L/M
muh cap	72	l qal.	Muhlenbergia capillaus	White Awn Muhly	2′	L
myr com	22	5 qal.	Myrtus communis	Myrtle	4′	L/M

TREE LEGEND

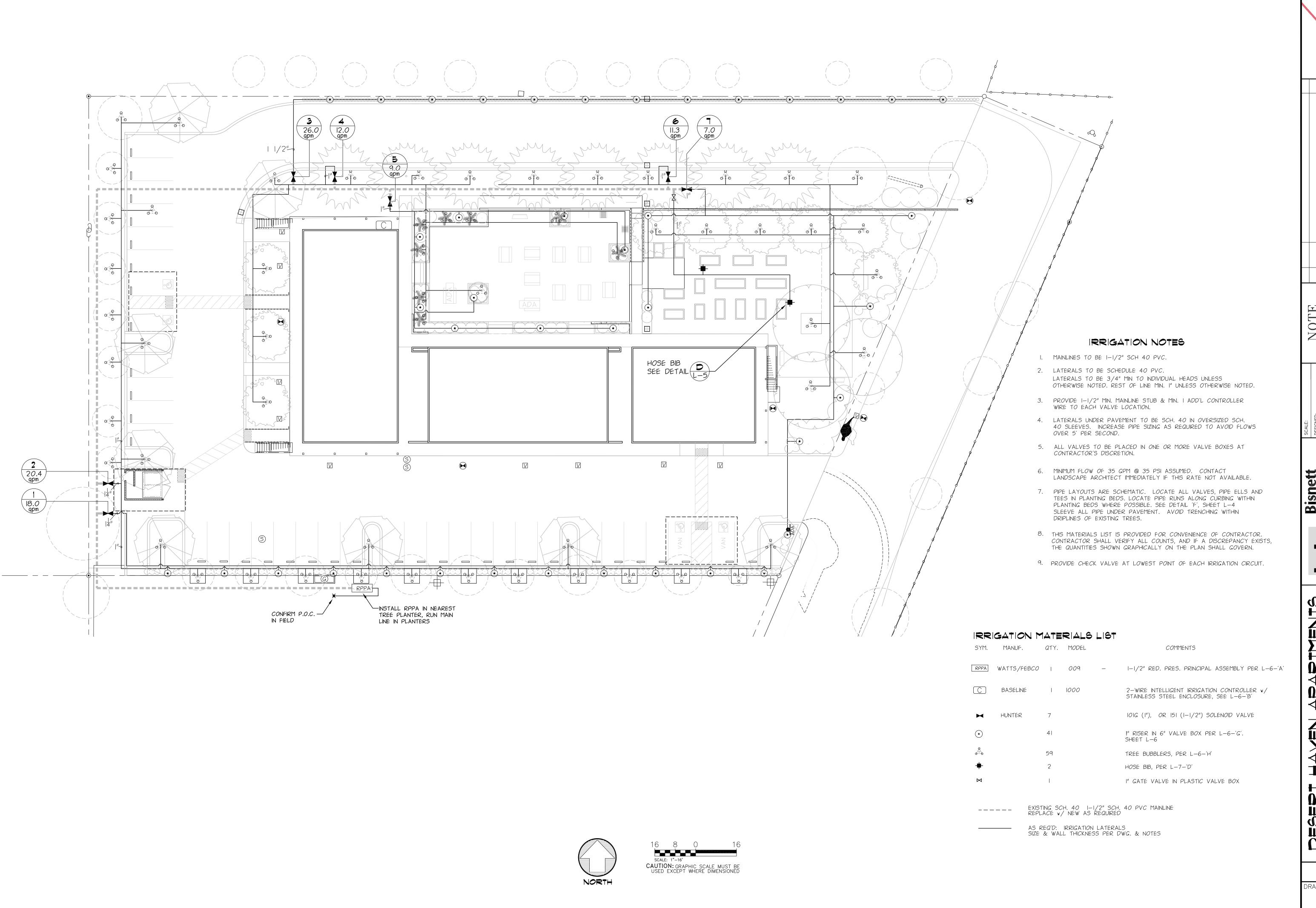
SYMB0L	QTY	SIZE	PLANT NAME	COMMON NAME	WATER USE
A Constant	9	15 qal.	Cercidium 'Desert Museum'	Thornless Palo Verde	L/M
	ß	24" box	Chamaerops humilis	Mediterranean Fan Palm	M
	8	15 qal.	Chitalpa tashkentensis 'Morning Cloud'	Chitalpa	L/M
\odot	3	15 qal.	Quercus suber	Cork Oak	L/M
WAY . H	8	15 qal.	Pinus eldarica	Afqhan Pine	L/M
\odot	l	24" box	Punica qranatum 'Tanyosho'	Flowering Pomegranate	М



popa

6-21-18

DRAWING::



NOTE

Bisnett Design Associa

00

6-21-18

DRAWING::

Architect must approve proposed substitutions.

The Contractor shall specifically request two working days in advance the following NOTIFICATIONS OF PLANT MATERIAL: Within 7 days after award of contract, Contractor shall submit to Landscape Architect certification of the quantity and species of plant material ordered, the nursery supplying the material and list of plant material not available. Landscape

QUALITIES: Contractor shall furnish and install all plants shown schematically on the drawings. Plant list is for use of client and Landscape Architect and does not represent complete limits of the contract.

ROOT SYSTEMS: All container—grown plant material shall be grown in the container for at least six months prior to the planting, and shall be well established in the container. Contractor shall allow one percent of the plant quantity for removal and inspection. Any plant material which is determined by the Landscape Architect within one year following final acceptance of the project to be defective, declining, root bound or otherwise deficient due to abnormal root growth, shall be replaced by the Contractor with specimens equivalent in development to adjacent plantings.

TREES: All trees shall have straight, uniformly tapered trunks free of damaged bark, with all mnor abrasions and cuts showing healing tissue. Trees unable to stand upright without support shall be rejected. Sucker basal and lateral growth shall be removed. HEALTH: Foliage, roots and stems of all plants shall be vigorous, healthy and normal for species. All plants to be free of disease, harmful insects, burns or other disfiguring

UNTRUE SPECIES: All plant material determined by the Landscape Architect to be untrue to the species, clone and/or variety specified within the first year following acceptance of the project, shall be replaced by the Contractor with specimens equivalent in development to SOIL PREPARATION

DESCRIPTION: Work in this section includes the installation of topsoil and soil amendments, finish grading, preparation of planting pits and related incidental work. REVIEWS: The Contractor shall specifically request two working days in advance the following reviews prior to progressing with the work: rough grading, planting pits for box trees, finish NOTIFICATION OF AMENDMENTS: Contractor shall provide samples of written certificates stating quantity, volume, composition and origin for all amendments, chemicals and import soils before said material is used on the site.

PRODUCT SPECIFICATIONS: NATIVE SOIL: Shall be the soil existing on the site prior to work after all rocks over one—and one—half inches in diameter and all foreign matter have been removed. IMPORTED TOPSOIL: Shall be free of chemicals harmful to plant growth, weed seed and growth, harmful insects, rocks over one—and—one—half inches in diameter and clods over 4 inches in diameter, or which will not break up during installation. Soil shall conform to USDA

classification for sandy loam. SOIL AMENDMENT: Shall be a nitrified, composted sawdust or rice—hull—based product approved by Landscape Architect prior to delivery on site. FERTILIZER: For container-grown plant stock use controlled-release 'Bio-Pak' fertilizer packets, 10-gram 16-16-8 NPK with sulphur, iron, magnesium and zinc. For ground cover and lawn areas use urea—based resin coated fertilizer, 16-7-12 NPK with iron. PLANTER SOIL MIX: To be a bulk UC—type planting mix or equivalent as approved by Landscape Architect.

To be chipped fir bark screened 1/4"-1", 3" deep as approved by Landscape Architect. PRE-EMERGENTS: Apply Treflan, Ronstar G or approved equivalent to area of work after planting as per manufacturers instructions. Apply second application at the end of the

ROOT FUNGICIDES: Treat rootballs of all California natives with Benlate as per manufacturers instructions or approved alternative during transplanting. ANTI-DESICCANTS: Apply Wilt-pruf NCF or approved equivalent as per manufacturers instructions to all trees immediately after planting.

WARRANTY: The contractor shall be responsible for all plant material and workmanship for a period of 90 days, except as noted, following date of substantial completion. At the end of the period any plant that is dead or has not shown satisfactory growth due to Contractor's installation or negligence shall be replaced at Contractor's expense with material originally specified. Contractor shall not be held liable for plants damaged or destroyed by vandalism or

TIME LIMITS: The maintenance period shall commence from the date of substantial completion and extend for 90 days thereafter.

REQUIREMENTS: All planting areas shall be kept weed—free at all times during the maintenance period. Disease, insect and pest control shall be the Contractor's responsibility. All planting areas shall be kept at optimum moisture for plant growth. Planting not adequately irrigated by automatic irrigation system shall be hand watered as needed and irrigation system adjusted as necessary to maximize performance. Erosion, or settlement of soil, sod or plantings shall be repaired by contractor, and dead or dying plants replaced promptly as their condition

traffic, and/or theft prior to substantial completion shall be replaced by Contractor without cost to Owner. Subsequent to substantial completion, losses due to vandalism, vehicular traffic, and/or theft shall be the responsibility of the Owner to repair or replace. TURF GRASS: Contractor shall provide all services and incidental work necessary to promote and maintain a hardy, well-established turf during the maintenance period. Bare or weak spots

OWNER'S RESPONSIBILITY: Work installed under this contract damaged by vandalism, vehicular

should be promptly resodded. Turf grass should be moved to a two inch height after it first exceeds a three inch height and mowed at this height weekly. Grass clippings shall be removed SUBSTANTIAL COMPLETION: Occurs at time when Landscape Architect certifies all major planting, including seed and ground cover, has been satisfactorily installed, the irrigation is fully operational, mulches and top dressings are in place and all other work is satisfactorily

completed, with the exception of minor items compiled by the Landscape Architect for prompt EXECUTION
SOILS TEST: The soil preparation requirement shown below is preliminary for bidding purposes

only. A soils test shall be provided by the contractor at time of construction. Soil preparation requirements shall be modified to comply with actual soil preparation recommendations in the soils report. A copy of the soils report shall be submitted prior to approval of the soil amendments per these specifications. LIMITS AND GRADES: The Contractor shall specifically request two working days in advance

prior to progressing with the work a review of existing grades and of the site and work completed to date, and of the soil preparation work to commence. Contractor shall complete the rough grading as necessary to round top and toe of all slopes and to provide natural contours between newly graded areas and the surrounding topography. TOPSOIL PLACEMENT: Subgrade shall be ripped or tilled until it is loose and friable to depth of six inches. Topsoil shall be spread to six inches in depth and tilled uniformly into subsoil. Remainder of topsoil to be spread, thoroughly water—settled, and brought to smooth

even grade in accordance with paragraph entitled 'FINISH GRADING'. AMENDMENT PLACEMENT: Areas to be planted with perennials or plant materials from flats or six—packs shall have a minimum of four (4) cubic yards of approved amendment per 1000 square feet tilled thoroughly into the top six inches of soil until a homogenous mixture of soil and amendment has been obtained. Lawn areas shall have a minimum of three inches of approved amendment similarly installed. Fertilizer shall be applied over amended areas at the rate of twenty pounds per one thousand square feet prior to tilling.

BACKFILL of PLANT PITS: Backfill for plant pits shall be one part approved amendment to two parts existing soil for rhododendrons, azaleas and other acid—loving plantings of the ericacea family, and one part approved amendment to three parts existing soil for other plantings. Plant pits shall have their sides and bottoms scarified to prevent compaction or qlazing. Plant pits shall be dug to twice the width and I-I/2 times the depth of the rootball to be planted for one, five and fifteen gallon plantings. Boxed specimens shall have a minimum of twelve inches of backfill all around. Pits shall be filled with amended backfill to height required for planting, filled with water, and permitted to drain. Verify plantings are at or slightly above finish grade.

FERTILIZER: Container plants shall receive fertilization at the rate of one packet per container I. Specimen plants shall receive fertilization at the above rate or at 5 packets per caliper inch,

whichever is less. 2. Space packets evenly around the rootball halfway up (or at varying depths for fifteen gallon and boxed specimens) without touching sides of rootball. 3. Acid loving plants of family ericacae such as Rhododendron, Azalea, Pieris, Camellia and Erica shall

receive acid fertilizer as per manufacturers specifications. TRANSPLANT PROCEDURES: l) Soak area within drip line of plant thoroughly, 48 hours before transplanting small specimen and 96 hours before transplanting large specimen trees. Verify that plant is not drought stressed and

2) Prepare planting hole as per regular planting specifications. 3) Prune back 30%-50% of the foliage, depending on type of planting and season. 4) Spray remaining foliage with 'Wiltpruf' or approved equal anti-desiccant. 5) Trench all around rootball and secure if necessary. Underdig rootball and lift, with sling if

necessary, and place in new plant pit. Do not allow rootball to break. 6) Place rootball at or above grade. Trees should be placed with crowns minimum 2" above finish

7) Fertilize as per above specs. Backfill around rootball and build watering basin.

9) Soak thoroughly.

moisture remains throughout root zone.

(0) Stake trees to prevent movement of rootball as per tree detail. FINISH GRADING: Contractor shall finish all planting areas, and shall remove all rocks and clods over I" in diameter from surface. All erosion damage occurring during construction period shall be repaired, and all areas should be smooth and evenly graded. Unless otherwise noted, all soil finish grades shall be one inch below finish elevations of walks, pavement and curbs. Grade all finish surfaces smooth and even with positive drainage to swales or drain inlets.

SODDING PROCEDURES:

1) Soil Preparation: As per above. 2) Grading and Rolling: Carefully smooth all surfaces to be sodded. Roll area to expose soil depressions or surface irreqularities. Regrade as required. 3) Fertilizing: Spread turf starter fertilizer onto the soil evenly at the rate of four (4) pounds per 1,000 square feet of lawn area. 4) Laying sod: Lay first strip of sod along a straight line (use a string in irregular areas.)

Butt joints tightly, but do not overlap edges. On second strip, stagger joints. Use a sharp knife to cut sod to fit curves, edges and irrigation heads 5) Watering: Do not lay entire lawn before watering. When a conveniently large area has been sodded, water lightly to prevent drying. Continue to lay sod and to water until

6) Rolling sod: After laying all sod, roll lightly to eliminate irregularities and to form good contact between sod and soil. Avoid a very heavy roller or excessive initial watering which may cause roller marks. 7) Irrigation: Water thoroughly the completed lawn surface. Soil should be moistened at least

eight (8) inches deep. Repeat irrigation at regular intervals to keep sod moist at all times until rooted. After sod is established, decrease frequency and increase amount of water per application as necessary. 8) Replacement: Replace all dead or dying sod with equal material as directed by the

FINAL REVIEW: Contractor shall request a final review of the project within five (5) days in advance of the proposed date, and subsequent to the completion of the maintenance period. Failure to request this review will automatically postpone the date of completion, and lengthen the maintenance period, until final review is approved. MAINTENANCE: All landscaping material shall be maintained in a healthy and weed free condition; dead plant material shall be replaced immediately. All trees shall be maintained and pruned in

accordance with the accepted practices of the International Society of Arboriculture (ISA).

DESCRIPTION: Work in this section includes installation of a complete automatic irrigation system, including trenching, piping, valves, back flow prevention device, controller, pressure requiators, sprinklers, emitters and other components and incidentals related thereto. QUALITY: All materials shall be new and of the quality specified or better. All materials shall be clearly marked by manufacturer on material, containers, or certificates of contents, PIPE AND FITTINGS: Mainlines to be Schedule 40 Polyvinyl chloride pipe (PVC). Lateral lines to be Schedule 40 PVC. Weldon PVC primer or equal to be used according to manufacturers directions on Schedule 40 pipe connections. Do not use on class pipe. All fittings shall be Schedule 40 heavy wall or thicker. Use solvent as recommended by pipe manufacturer. Use Teflon tape on all threaded joints. For above ground mainline connections use galvanized pipes, for above ground laterals use schedule 80 pipe (with clear cement) or palvanized pipe. For sprinkler heads use schedule 80 nipples with marlex ells triple swunq. CONTROL WIRE: To be 16 qauqe, 24 volt solid UA approved for direct burial. Splices shall be made in valve boxes only and shall be "Scotch—lok" seal packs or equal according to

VALVE BOXES: Shall be precast concrete or plastic of type and size indicated. Must be free of cracks and structural defects. Boxes subject to vehicular traffic shall be concrete and have heavy—duty steel covers. IRRIGATION EQUIPMENT: Refer to drawings. Substitutions must be approved in advance in writing by Landscape Architect.

GRADING: Contractor shall install all irrigation features to their finish grade and at depths indicated. All rough grading to be finished or accommodated before trenching begins. LAYOUT: Lavout work as accurately as possible to the drawings. Note that the drawings are diagrammatic. Swing joints, offsets and all fittings are not shown. Pipelines shown parallel on the drawing may be installed in a common trench. Where pipelines are shown parallel or adjacent to shrub or ground cover areas they shall be installed in those areas. Where pipelines are shown alongside the intersection of lawn and pavement areas they shall be installed in the lawn area. Changes in depth of pipe shall be accomplished with 45—dearee fittings. Mainlines to be buried to 24" minimum depth, laterals to 12" minimum, except where otherwise

FABRICATION: Snake pipe from side to side where trenches exceed 30 feet in length. Manifolds to be constructed to allow valves and boxes to be arranged neatly, uniformly and parallel with adjacent surfaces where appropriate.

THRUST BLOCKS: Contractor to install thrust blocks on mains at all right angle bends, changes in grade and other points as recommended by manufacturer to protect pipe from damage where project pressure exceeds 70 psi. CONTROL WIRE: Control wire to be taped to irrigation line every 10 feet where practical

or placed in class 200 or thicker conduit. Place in steel conduit where installed above finish ADJUSTMENTS: Contractor to adjust arc, radius, height and distribution of all sprinkler heads for maximum performance of system without additional cost to owner. BACKFILL: Backfill with approved native or imported topsoil. Use no deb rocks greater than I" diameter may be in direct contact with pipe. Compact backfill to

FINISH GRADE: Set all heads at finish grade on polyethylene cut-off risers or swing joints as noted. Top of all valve boxes to be flush with finish grade. CONTROLLER: Contractor to clearly label and sequence stations as they are located around the site. Contractor shall submit forms as necessary to execute the controller quarantee, and shall provide owner with same. Contractor to provide owner with information regarding operation

and adjustment of controller, valves and sprinkler heads. AS-BUILT: Contractor shall keep a record of all changes to the system as they are made throughout the project, and shall provide owner with same on completion of project. Features below ground shall be identified with at least two measurements from above ground reference points, such as walls, walks or sprinkler heads.

. VERIFICATION: System design is based on 30 qpm and 60 psi being available at the point of connection. If this flow and pressure is not available the Landscape Architect shall be notified in writing prior to commencement of irrigation work. Flows in all pipes not to exceed 5 feet per second. Pipe to be upsized where necessary to avoid flows in excess of 5 feet per

UTILITIES: Contractor shall verify location of all on-site utilities and make all notifications as required prior to trenching. Restoration of damaged utilities is the Contractor's responsibility. CODES: Irrigation system to be installed in accordance with all applicable local codes as well as manufacturers specifications. If there is a discrepancy with the specifications contained heren, Landscape Architect shall be notified promptly by telephone and in writing prior to

CLEAN-UP: Site to be kept neat and debris-free throughout course of project. All surplus material to be removed from site at completion of work and/or when directed by the Landscape Architect.

GUARANTEE: Landscape contractor shall fill and repair all depressions and replace as necessary lawn and planting affected by settling or irrigation trenches for one year following acceptance of the job. Contractor shall also guarantee all materials, equipment and workmanship to be free of defects for a period of one year following acceptance of project, and shall replace and repair any defects at his expense that may be found in that period.

DECOMPOSED GRANITE

installed per mfg specifications.

Decomposed granite must be crushed granite rock screenings graded from 3/8—inch particles to dust. The material must comply with the following gradation:

Sieve Size	Percent Passing
3/8-inch	100
No. 4	95-100
No. 8	75–8 <i>0</i>
Nol. 16	55-65
No. 30	40-50
No. 50	25-35
No. 100	20-25

The decomposed granite must be uniform in color and uniform in texture. Color shall be "California Gold" gravel or approved equal.

No. 200 5-15

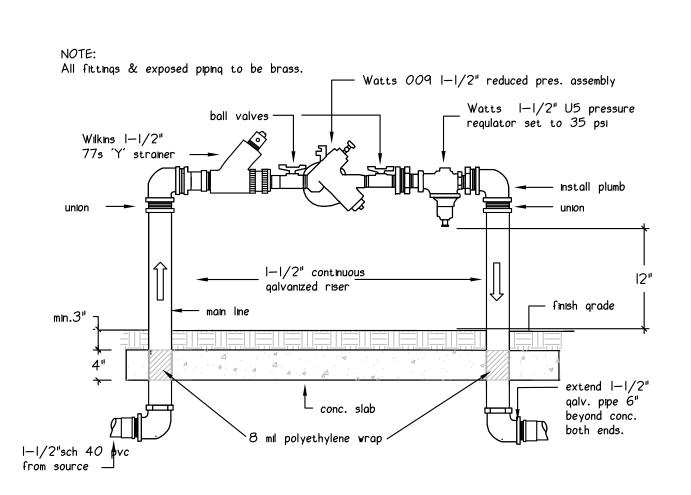
BINDING MATERIAL / SOLIDIFYING EMULSION: Solidifying emulsion must be either a water based polymer or powder based product and be non-toxic, colorless, odorless, and organic in nature. The binder/ solidifying emulsion must not alter the decomposed granite color. "Stabilizer" by Stabilizer Solutions or approved equal,

EARTHWORK: After clearing, excavate areas to receive decomposed granite. Where decomposed granite is to be placed adjacent to an existing curb, pavement or sidewalk, excavate so that the finished decomposed granite elevation adjacent to curb, pavement or sidewalk will maintain planned flow lines, slope gradient and contours of the project site. After excavaton, grade areas to receive decomposed granite to a smooth, uniform surface and compact to not less than 90

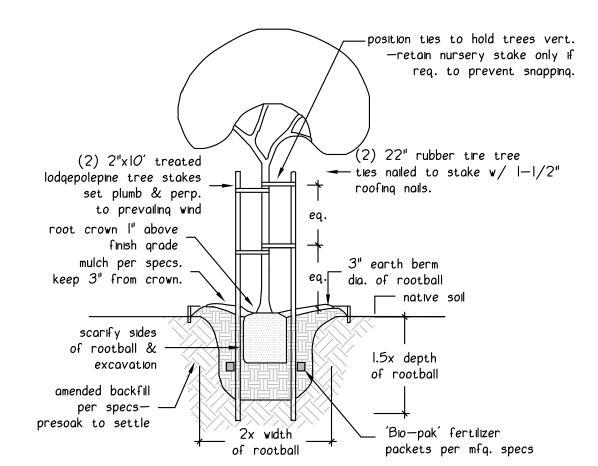
percent relative compaction. STABILIZED DECOMPOSED GRANITE INSTALLATION

Do not install decomposed granite during rainy conditions. Mix solidifying emulsion thoroughly and uniformly throughout the decomposed granite per the manufacturer's recommendations. Mix the material in the field using portable mixing equipment, or delivered in mixer trucks from a local ready—mixed plant. Place decomposed granite uniformly no more than 2-inch thick, over 2" 95% compacted class II base rock. Compact the layer of decomposed granite to a relative compaction of not less than 90 percent. Compaction must not begin less than 6 hours after placement, nor more than 48 hours. Apply a final application of binder / solidifying emulsion as recommended by the manufacturer. Prevent runoff or overspray of binder / solidifying emulsion onto adjacent paved or planting areas. When work is complete, the surface must be smooth, compacted to 90 percent, and uniform; maintaining original flow

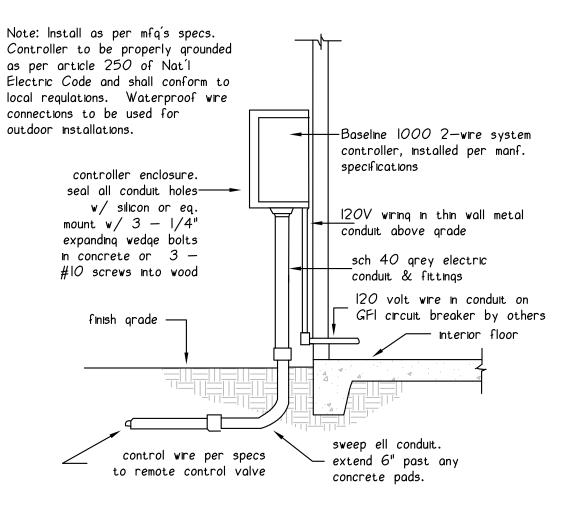
lines, slope gradient and contours to the site conditions, with minimum 1.9% slope.



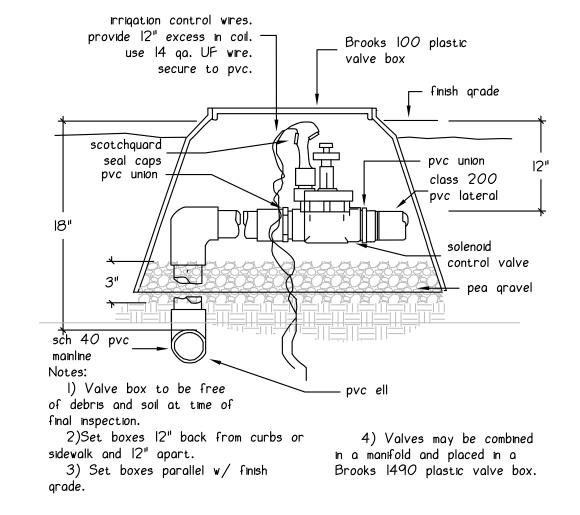


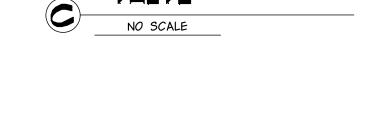


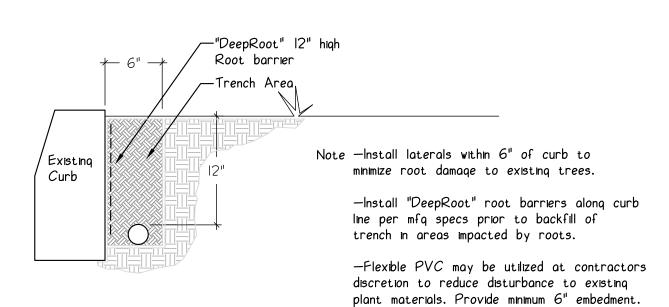






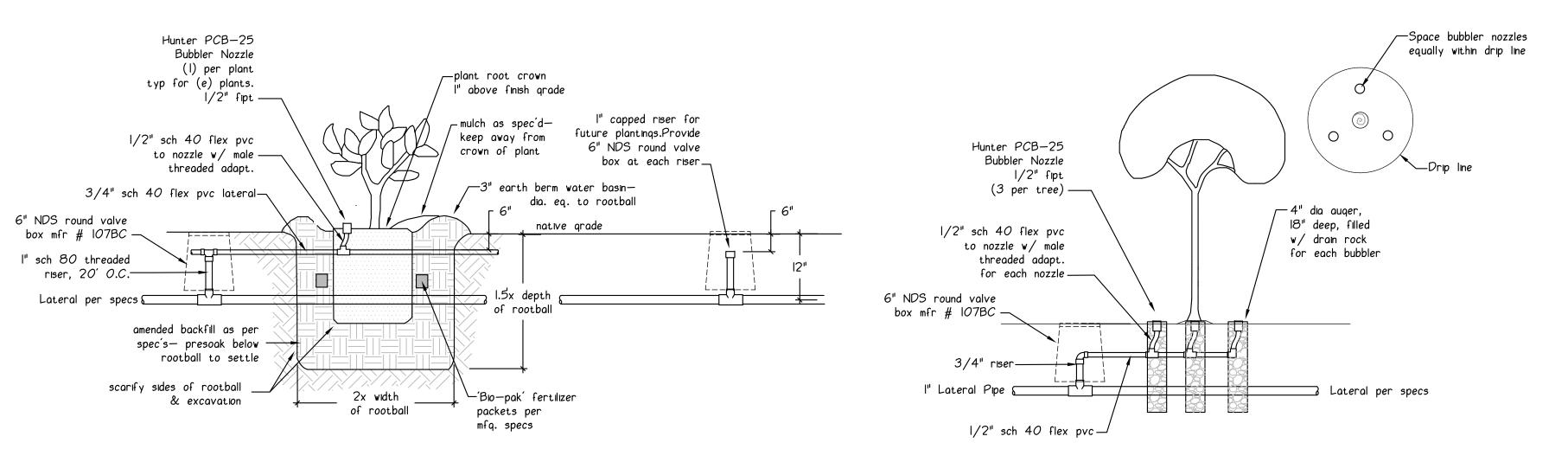






-Removal of significant roots (>3" dia) to be performed under direction of licensed arborist











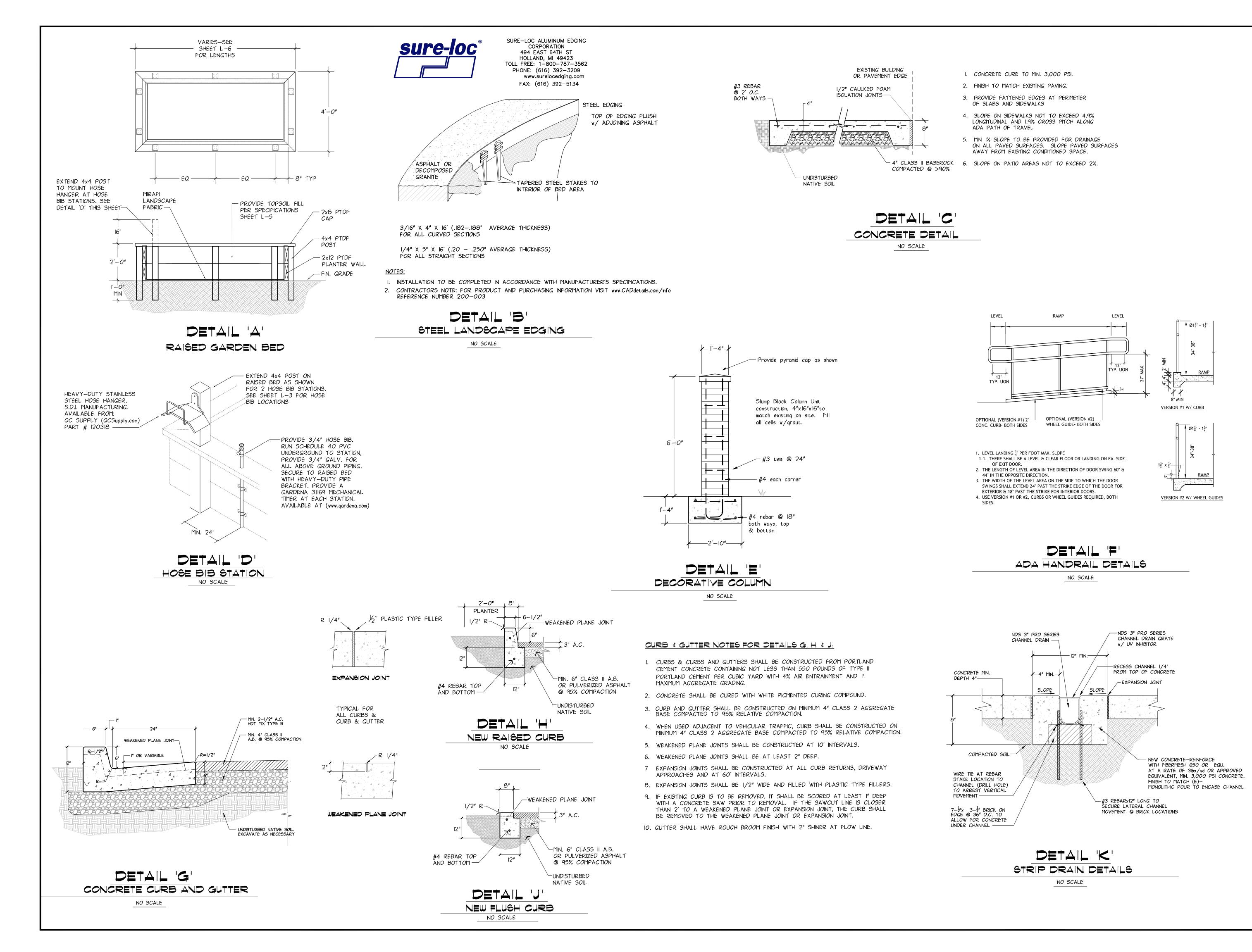
RAWING: :

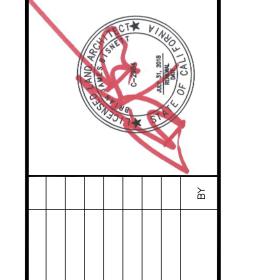
OTE

Bisne Desig Assoc

T

SS





TE: NO. DATE ISSUED FOR BY

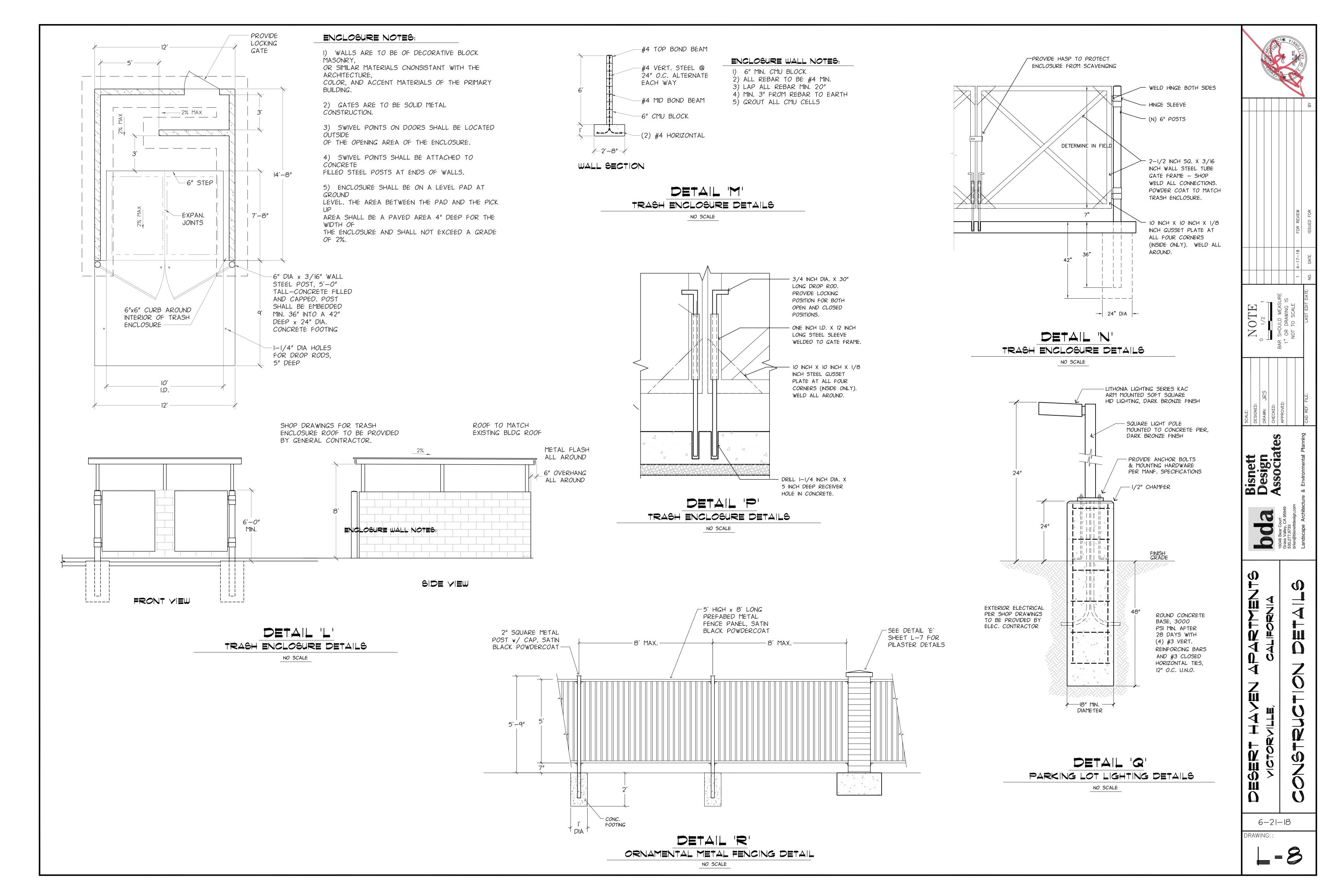
Bisnett Design Associates

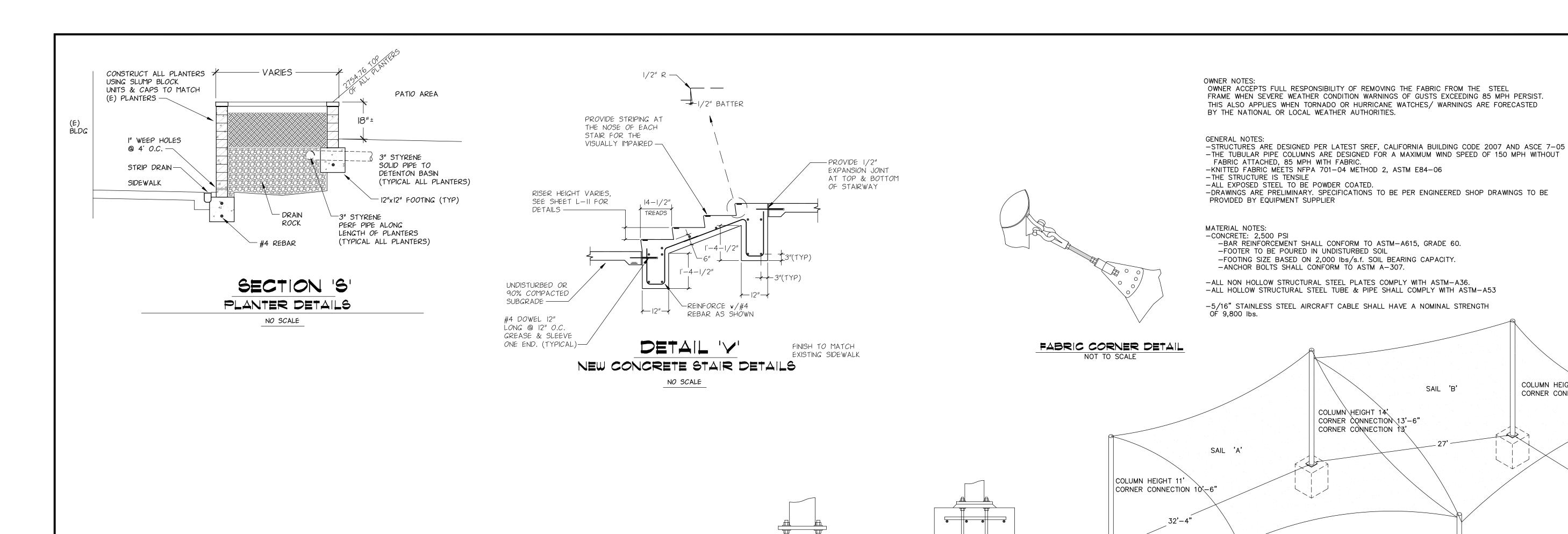
16046 Bear Court Grass Valley, CA 95949 530.277.9733 brian@bisnettdesign.com

SERT HAVEN APARTMEN
VICTORVILLE, CALIFORNIA
DNSTRUCTION DETAILS

6-21-18

PRAWING::

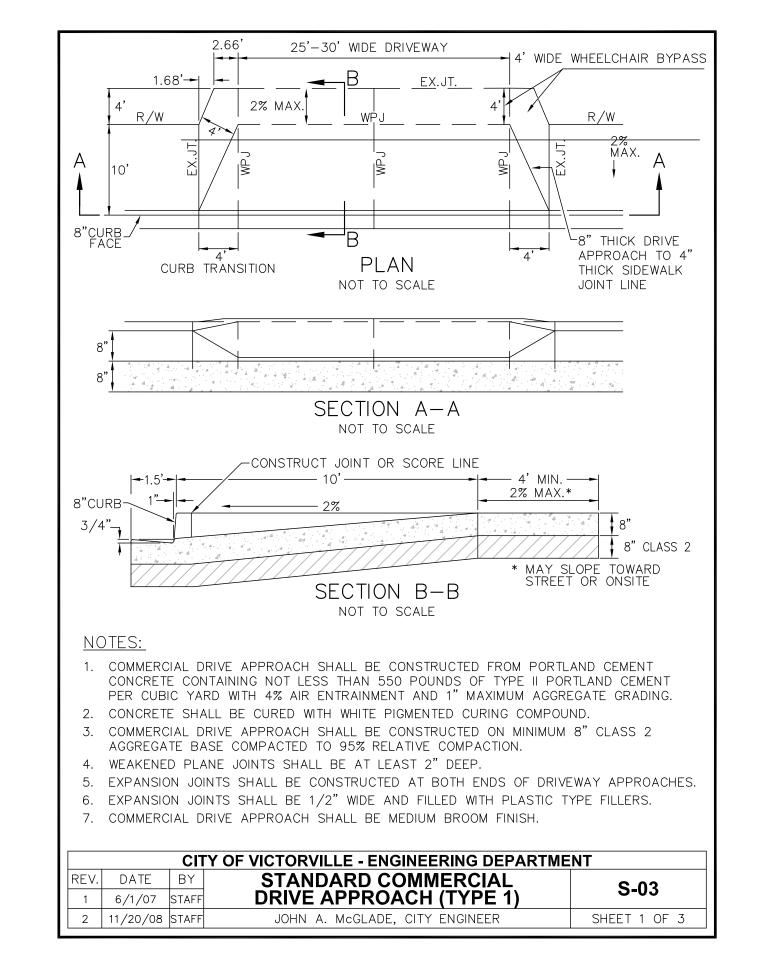




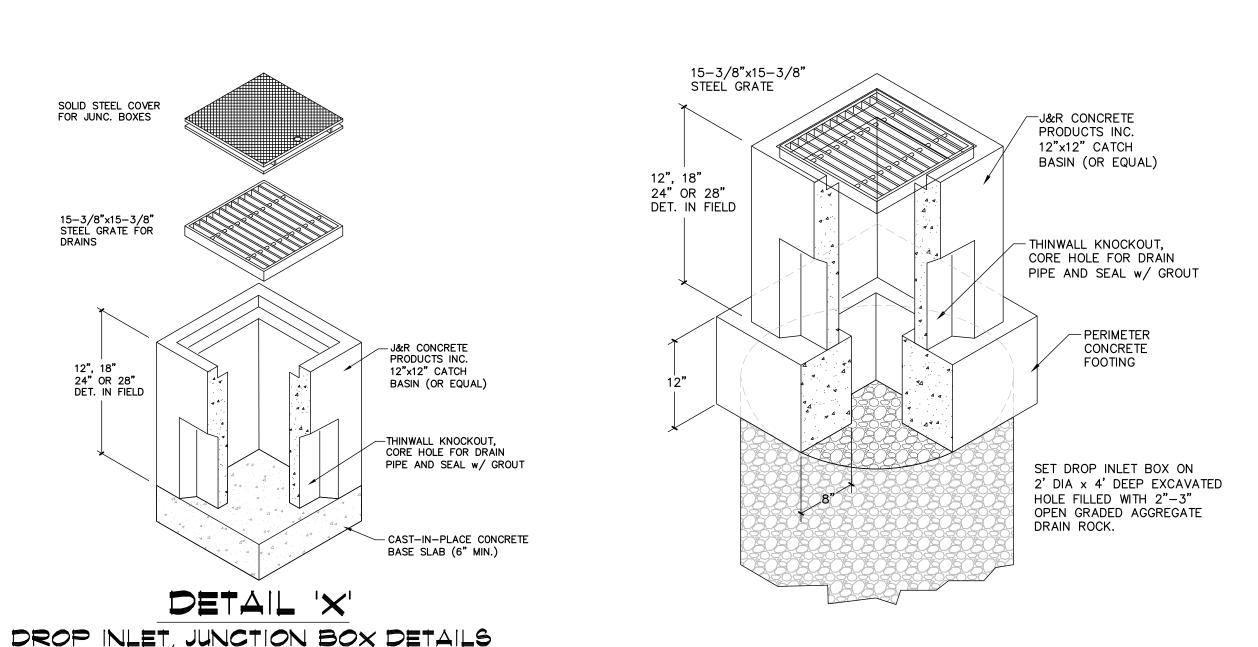
anchor Detail

NOT TO SCALE

NO SCALE







• • •

FOOTING DETAIL

DETAIL 'T

NO SCALE

TENSILE SHADE STRUCTURE DETAILS

NOT TO SCALE

DETENTION BASIN OVERFLOW OUTLET NO SCALE

UNAUTHORIZED VEHICLE WARNING SIGN (CA ONLY)

SEE SHEET L-2 FOR COLUMN LOCATIONS

- 1. SIGN IS TO BE POSTED AT EACH ENTRANCE TO THE OFF-STREET PARKING FACILITIES, OR POSTED AT EACH ACCESSIBLE PARKING
- 2. THE PHONE NUMBER AND ADDRESS WHERE TOWED VEHICLES CAN BE RECLAIMED IS POSTED AND A PERMANENT PART OF THE SIGN.
- 3. LETTERS MUST BE 1" MIN IN HEIGHT.
- 4. SIGN IS NOT LESS THAN 17" BY 22".

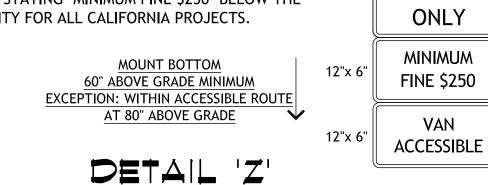
PARKING SPACE SIGNAGE

COLUMN HEIGHT 14'

CORNER CONNECTION 13'-6"

29'-9"

- 1. POST SIGNAGE AT EACH ACCESSIBLE SPACE.
- 2. AREA OF SIGN IS NOT SMALLER THAN 70 SQUARE INCHES. 3. WHEN POSTED IN A PATH OF TRAVEL, BOTTOM OF SIGN IS 80" MIN FROM FINISHED GRADE.
- 4. POST ADDITIONAL SIGN AT VAN ACCESSIBLE SPACES STATING "VAN ACCESSIBLE" BELOW SYMBOL OF ACCESSIBILITY.
- 5. REFLECTORIZED SIGN CONSTRUCTED OF PORCELAIN STEEL WITH BEADED TEXT OR EQUAL.
- 6. SIGN TO BE CENTERED AT THE INTERIOR END OF THE PARKING SPACE. 7. TEXT AND ACCESSIBILITY SYMBOL TO BE WHITE ON DARK BLUE
- BACKGROUND. 8. POST ADDITIONAL SIGN STATING "MINIMUM FINE \$250" BELOW THE
- SYMBOL OF ACCESSIBILITY FOR ALL CALIFORNIA PROJECTS.



ADA SIGNS AT PARKING AREAS

NO SCALE

COLUMN HEIGHT 174

COLUMN HEIGHT 18'

CORNER CONNECTION 17'-6" CORNER CONNECTION 17'

CORNER CONNECTION 10'-6"

COLUMN HEIGHT 14'

COLUMN & FOOTING DIMENSIONS TO BE PER ENGINEERED SHOP DRAWINGS PROVIDED BY

17" MIN

(24" RECOMMENDED)

UNAUTHORIZED VEHICLES

PARKED IN DESIGNATED

ACCESSIBLE SPACES NOT

DISPLAYING DISTINGUISHING

PLACARDS OR SPECIAL

LICENSE PLATES ISSUED

FOR PERSONS WITH

DISABILITIES WILL BE TOWED

AWAY AT THE OWNER'S

EXPENSE.

TOWED VEHICLES

MAY BE RECLAIMED AT

OR BY TELEPHONING

NO PARKING

UNAUTHORIZED VEHICLE SIGN

(NOTE: CA ONLY)

PARKING

ONLY

MINIMUM

EQUIPMENT SUPPLIER

CORNER CONNECTION

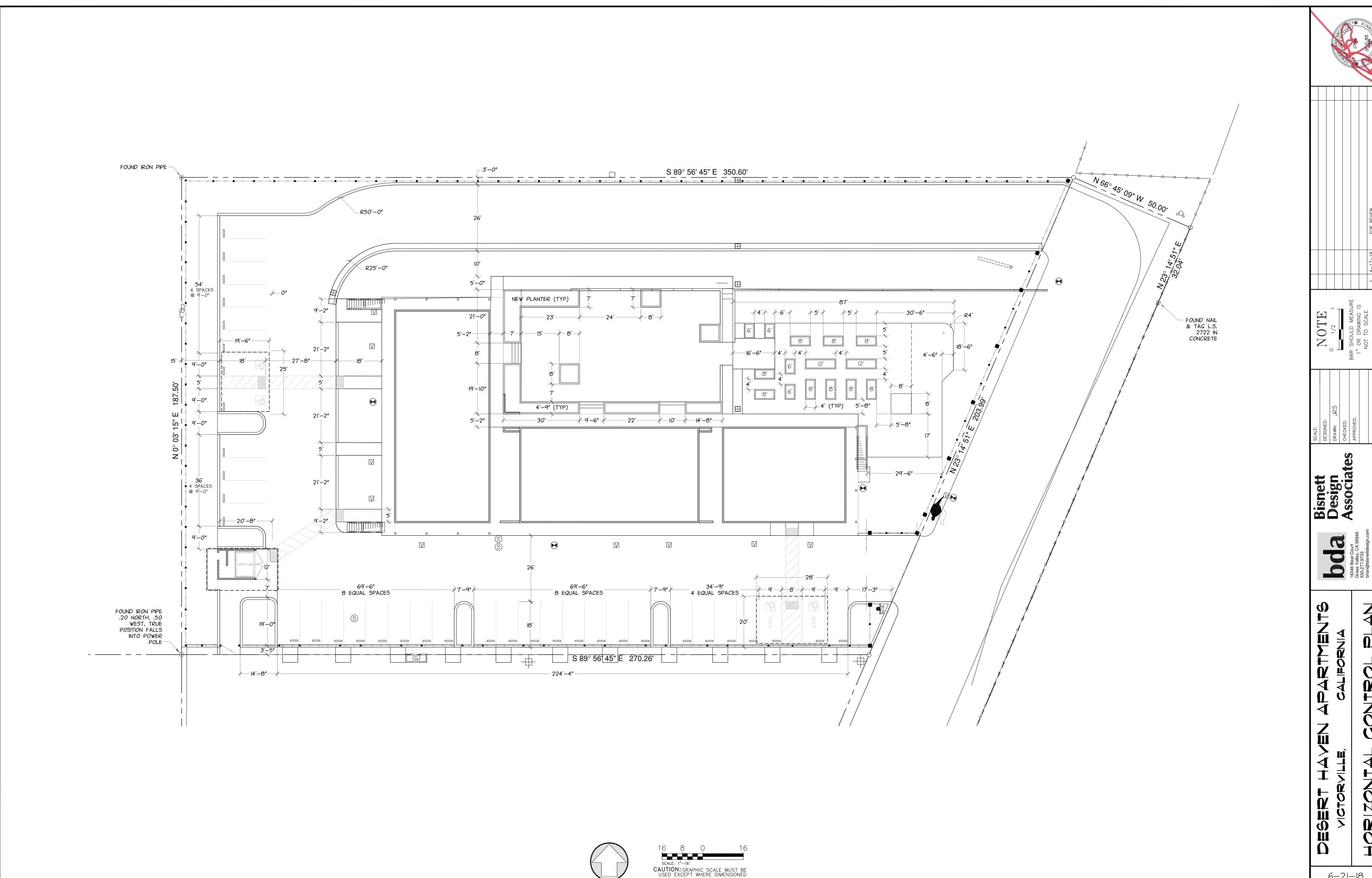
OTE

Bisne Desig Assoc

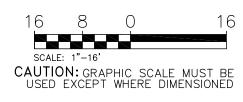
0

6-21-18

RAWING: :

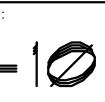


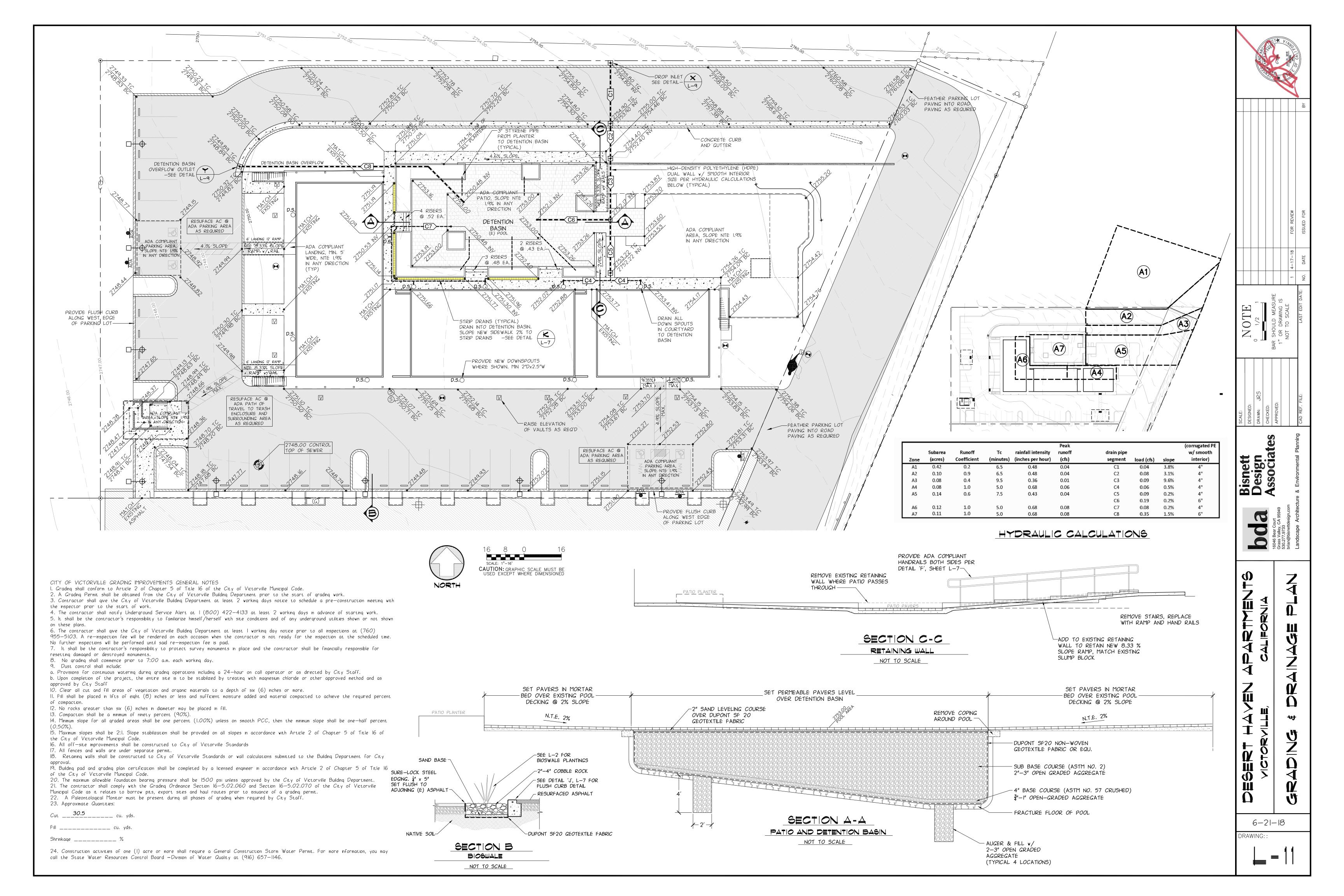




6-21-18





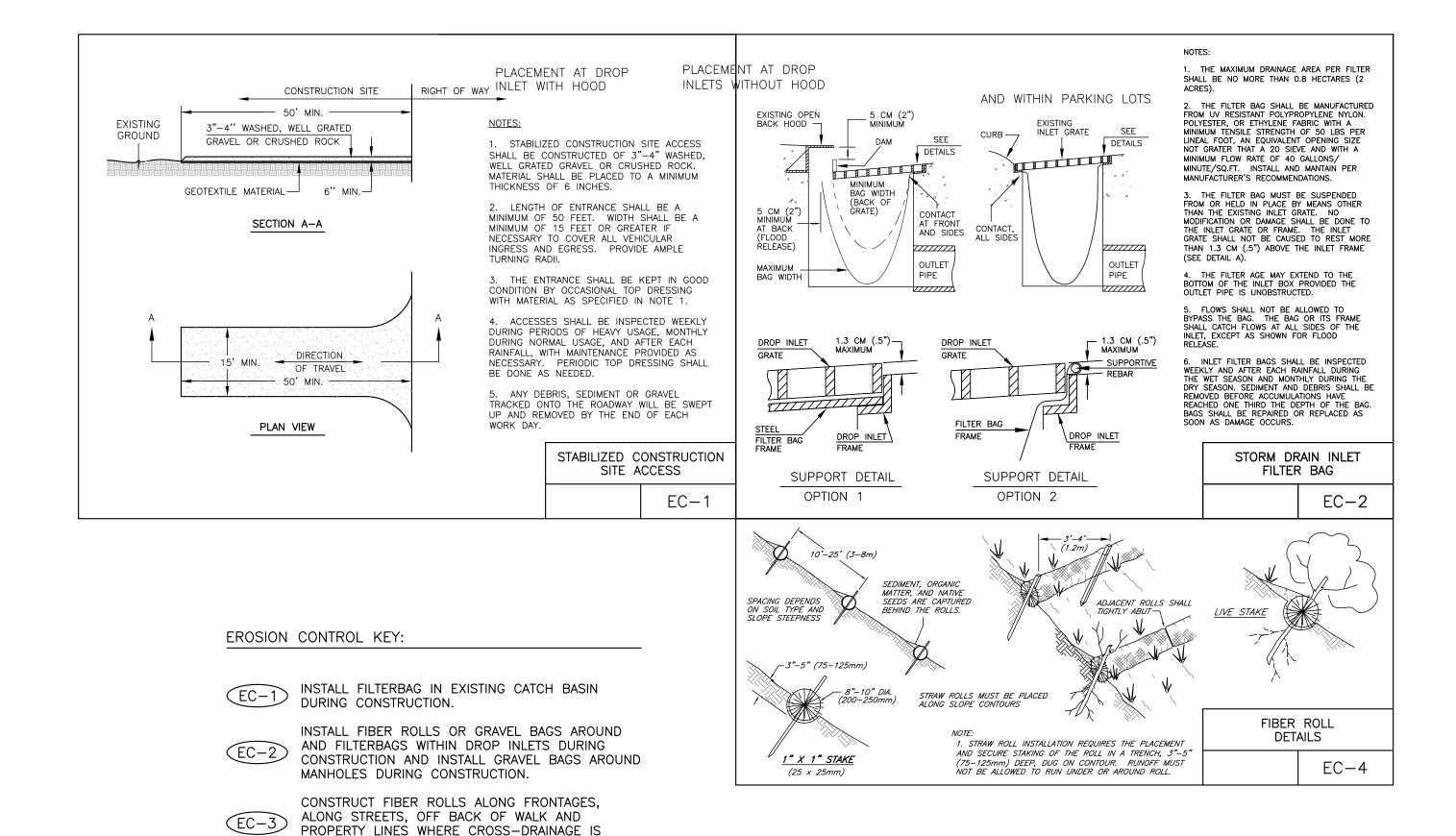


EROSION CONTROL NOTES:

- 1. A STAND-BY CREW FOR EMERGENCY WORK SHALL BE AVAILIBLE AT ALL TIMES DURING THE RAINY SEASON (NOVEMBER 1 THRU APRIL 15). NECESSARY MATERIALS SHALL BE AVAILIBLE ON-SITE AND STOCKPILED AT CONVENIENT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF EMERGENCY DEVICES WHEN PAIN IS IMMINENT.
- 2. EROSION CONTROL DEVICES SHOWN ON THIS PLAN MAY BE REMOVED WHEN APPROVED BY THE BUILDING OFFICIAL IF THE GRADING OPERATION HAS PROGRESSED TO THE POINT WHERE THEY ARE NO LONGER
- 3. GRADED AREAS ADJACENT TO FILL SLOPES LOCATED AT THE SITE PERIMETER MUST DRAIN AWAY FROM THE TOP OF SLOPE AT THE CONCLUSION OF EACH WORKING DAY. ALL LOOSE SOILS AND DEBRIS THAT MAY CREATE A POTENTIAL IMPACT TO OFF—SITE PROPERTY SHALL BE STABILIZED OR REMOVED FROM THE SITE ON A DAILY BASIS. DO NOT HOSE DOWN OR SWEEP SOIL OR SEDIMENT ACCUMULATED ON PAVEMENT OR OTHER IMPERVIOUS SURFACES INTO ANY STORMWATER CONVEYANCE (UNLESS CONNECTED TO A SEDIMENT BASIN, SEDIMENT TRAP, OR SIMILARLY EFFECTIVE CONTROL), STORM DRAIN INLET, OR SURFACE WATER.
- 4. ALL SILT AND DEBRIS SHALL BE REMOVED FROM ALL DEVICES WITHIN 24 HOURS AFTER EACH RAINSTORM AND BE DISPOSED OF PROPERLY.
- 5. A GUARD SHALL BE POSTED ON THE SITE WHENEVER THE DEPTH OF WATER IN ANY DEVICE EXCEEDS TWO FEET. THE DEVICE SHALL BE DRAINED OR PUMPED DRY WITHIN 24 HOURS AFTER EACH RAINSTORM. PUMPING AND DRAINING OF ALL BASINS AND DRAINAGE DEVICES MUST COMPLY WITH THE APPROPRIATE BMP OF RALL DEWATERING OPERATIONS.
- 6. THE PLACEMENT OF ADDITIONAL DEVICES TO REDUCE EROSION DAMAGE AND CONTAIN POLLUTANTS WITHIN THE SITE IS LEFT TO DISCRETION OF THE FIELD ENGINEER. ADDITIONAL DEVICES AS NEEDED SHALL BE
- INSTALLED TO RETAIN SEDIMENTS AND OTHER POLLUTANTS ON SITE.
 7. DESILTING BASINS MAY NOT BE REMOVED OR MADE INOPERABLE BETWEEN NOVEMBER 1 AND APRIL 15 OF THE FOLLOWING YEAR WITHOUT THE APPROVAL OF THE BUILDING OFFICIAL.
- 8. STORM WATER POLLUTION AND EROSION CONTROL DEVICES ARE TO BE MODIFIED, AS NEEDED, AS THE PROJECT PROGRESSES, THE DESIGN AND PLACEMENT OF THESE DEVICES IS THE RESPONSIBILITY OF THE FIELD ENGINEER. PLANS REPRESENTING CHANGES MUST BE SUBMITTED FOR APPROVAL IF REQUESTED BY
- 9. EVERY EFFORT SHOULD BE MADE TO ELIMINATE THE DISCHARGE OF THE NON-STORM WATER FROM THE PROJECT SITE AT ALL TIMES.
- 10. ERODED SEDIMENTS AND OTHER POLLUTANTS MUST BE RETAINED ON—SITE AND MAY NOT BE TRANSPORTED FROM THE SITE VIA SHEET FLOW, SWALES, AREA DRAINS, NATURAL DRAINAGE COURSES,
- 11. STOCKPILE OR EARTH AND OTHER CONSTRUCTION—RELATED MATERIALS MUST BE PROTECTED FROM BEING TRANSPORTED FROM THE SITE BY FORCES OF WIND OR WATER
- 12. FUELS, OILS, SOLVENTS, AND OTHER TOXIC MATERIALS MUST BE STORED IN ACCORDANCE WITH THEIR LISTED AND ARE NOT TO CONTAMINATE THE SOILS AND SURFACE WATERS. ALL APPROVED STORAGE CONTAINERS ARE TO BE PROTECTED FROM THE WEATHER. SPILLS MUST BE CLEANED UP IMEDIATELY AND DISPOSED OF IN A PROPER MANNER. SPILLS MAY NOT BE WASHED INTO THE DRAINAGE SYSTEM.
- 13. EXCESS OR WASTE CONCRETE MAY NOT BE WASHED INTO THE PUBLIC WAY OR ANY OTHER DRAINAGE SYSTEM. PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTE ON—SITE UNTIL THEY CAN BE DISPOSED OF A SOLID WASTE.
- 14. DEVELOPER/CONTRACTORS ARE RESPONSIBLE TO INSPECT ALL EROSION CONTROL DEVICES AND BMPs ARE INSTALLED AND FUNCTIONING PROPERTY IF THERE IS A 40% ACTUAL PRECIPITATION. A CONSTRUCTION SITE INSPECTION CHECKLIST AND ACTUAL PRECIPITATION, AND AFTER ACTUAL PRECIPITATION. A CONSTRUCTION SITE INSPECTION CHECKLIST AND INSPECTION LOG SHALL BE MAINTAINED AT THE PROJECT SITE AT ALL TIMES AND AVAILIBLE FOR REVIEW BY THE BUILDING OFFICIAL (COPIES OF THE SELF-INSPECTION CHECK LIST AND INSPECTION LOGS ARE AVAILIBLE UPON REQUEST).
- 15. SEDIMENTS AND OTHER MATERIALS MAY NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS MUST BE STABILIZED SO AS TO INHIBIT SEDIMENT FROM BEING DEPOSITED INTO THE PUBLIC WAY. ACCIDENTAIL DEPOSITION MUST BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS.
- 16. ANY SLOPES WITH DISTURBED SOILS OR DENUDED OF VEGETATION MUST BE STABILIZED SO AS TO INHIBIT
- 17. EROSION CONTROL FACILITIES AND MEASURES ARE TO BE INSTALLED AND OPERABLE AT ALL TIMES DURING CONSTRUCTION
- 18. CHANGES TO THE EROSION CONTROL MEASURES INDICATED ON THESE PLANS AND DESCRIBED HEREIN TO ACCOMMODATE FIELD CONDITIONS MAY BE MADE ONLY WITH THE PRIOR APPROVAL OF, OR AT THE DIRECTION OF THE STATE REPRESENTATIVE.
- 19. EARTHEN BERMS AND STRAW BALE DIKES OR GEOTEXTILE FABRIC BARRIER SHALL BE CONSTRUCTED TO PREVENT OFF—FLOW OR SILTATION FROM THE PROJECT SITE. THE BERMS AND DIKES SHALL BE MAINTAINED IN PLACE UNTIL THE CONCLUSION OF THE SITE PAVING.
- 20. ALL PAVED AREAS SHALL BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS THE SITE SHALL BE MAINTAINED SO AS TO PREVENT SEDIMENT— LADEN RUNOFF FROM ENTERING THE STORM DRAINAGE SYSTEM OR AD MACHIT PROPERTIES.
- 21. ALL EROSION CONTROL FACILITIES SHALL BE INSPECTED BY THE CONTRACTOR AND REPAIRED AS REQUIRED AT THE CONCLUSION OF EACH WORKING DAY DURING THE RAINY SEASON THE CONTRACTOR SHALL INSPECT THE EROSION CONTROL FACILITIES AND MAKE NECESSARY REPAIRS THERETO PRIOR TO ANTICIPATED STORMS AND SHALL PERIODICALLY INSPECT THE SITE AT REASONABLE INTERVALS DURING STORMS OF EXTENDED DURATION. REPAIRS TO DAMAGED FACILITIES SHALL BE REPAIRED IMMEDIATELY.
- 22. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF THE EROSION CONTROL FACILITIES AND SHALL CONDUCT PERIODIC INSPECTION OF THE PROJECT SITE DURING STORMS OF PROLOCOLD DURATION AND/OR HEAVY INTENSITY TO ASSURE THAT THEY FUNCTION IN THE MANNER
- 23. ALL LOOSE SOIL AND DEBRIS SHALL BE REMOVED FROM THE STREET AREAS UPON STARTING OPERATIONS AND AT THE END OF EACH WORKDAY OR AS NECESSARY.
- 24. THE CONTRACTOR SHALL INSTALL THE STABILIZED CONSTRUCTION ENTRANCE PRIOR TO COMMENCEMENT OF GRADING. LOCATION OF THE ENTRANCE MAY BE ADJUSTED BY THE CONTRACTOR TO FACILITATE GRADING OPERATIONS. ALL CONSTRUCTION TRAFFIC ENTERING THE PAVED ROAD MUST CROSS THE STABILIZED CONSTRUCTION ENTRANCE. THE STABILIZED CONSTRUCTION ENTRANCE SHALL REMAIN IN PLACE UNTIL THE ROAD BASE ROCK COURSE IS COMPLETED.
- 25. AS STORM DRAIN IMPROVEMENTS ARE CONSTRUCTED, ALL STRUCTURES AND INLET PIPES SHALL BE PROTECTED FROM INFLOW OR SILT WITH FILTER BAGS OR GRAVEL BAG SILT BARRIERS.
- 26. ADJACENT PROPERTIES SHALL BE PROTECTED FROM STORM WATERS, MUD, SILT, ETC. ON A DAILY BASIS.
- 27. DUST CONTROL SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND UNTIL FINAL COMPLETION. THE CONTRACTOR WHEN HE OR HIS SUBCONTRACTOR ARE OPERATING EQUIPMENT ON—SITE, SHALL PREVENT THE FORMATION OF ANY AIRBORNE NUISANCE BY WATERING AND/OR TREATING THE SITE OF THE WORK IN SUCH A MANNER THAT WILL CONFINE DUST PARTICLES TO THE IMMEDIATE SURFACE OF THE WORK. ADDITIONAL WATERING SHALL BE PROVIDED ON DRY OR WINDY DAYS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE CAUSED BY DUST FROM HIS OWN ACTIVITIES OR HIS SUBCONTRACTORS ACTIVITIES IN PERFORMING THE WORK UNDER THIS CONTRACT AND SHALL BE RESPONSIBLE FOR ANY CITATIONS, FINES, OR CHARGES RESULTING FROM DUST NUISANCE. DUST CONTROL WILL BE DONE ON A DAILY BASIS.

28. MAINTENANCE IS TO BE PERFORMED AS FOLLOWS:

- A. THE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED EVERYDAY AND AFTER EACH
- B. SILT FENCES, BERMS AND SWALES ARE TO BE INSPECTED AFTER EACH STORM AND REPAIRS MADE AS NEEDED. GRAVEL BAGS PLACED AROUND CURB INLETS SHALL BE INSPECTED AND REPLACED IF
- C. SEDIMENT SHALL BE REMOVED AND SEDIMENT TRAPS RESTORED TO ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO WITHIN A FOOT OF OUTLET ELEVATION OR TO 1/2 THE HEIGHT OF ANY PERIMETER CONTROL.
- D. SEDIMENT REMOVED FROM TRAPS SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. E. SEEDED AREAS WILL BE REPAIRED, RESEEDED AND MULCHED AS SOON AS POSSIBLE AFTER DAMAGED.
- 29. CONTRACTOR SHALL IMPLEMENT HOUSEKEEPING PRACTICES AS FOLLOWS:
- A. SOLID WASTE MANAGEMENT: PROVIDE DESIGNATED WASTE COLLECTION AREAS AND CONTAINERS. ARRANGE FOR REGULAR REMOVAL AND DISPOSAL. CLEAR SITE OF TRASH INCLUDING ORGANIC DEBRIS, PACKAGING MATERIALS, SCRAP OR SURPLUS BUILDING MATERIALS AND DOMESTIC WASTE DAILY.
- B. MATERIAL DELIVERY AND STORAGE: PROVIDE A DESIGNATED MATERIAL STORAGE AREA WITH SECONDARY CONTAINMENT SUCH AS BERMING. STORE MATERIAL ON PALLETS AND PROVIDE COVERING FOR SOLUBLE MATERIALS. RELOCATE STORAGE AREA INTO BUILDING SHELL WHEN POSSIBLE. INSPECT AREA WEEKLY.
- C. CONCRETE WASTE: PROVIDE A DESIGNATED CONCRETE TRUCK WASHOUT BIN. DISPOSE OF HARDENED CONCRETE OFFSITE. AT NO TIME SHALL A CONCRETE TRUCK DUMP ITS WASTE AND CLEAN ITS TRUCK INTO THE CITY STORM DRAINS VIA CURB AND GUTTER. INSPECT DAILY TO CONTROL RUNOFF, AND WEEKLY FOR REMOVAL OF HARDENED CONCRETE.
- D. PAINT AND PAINTING SUPPLIES: PROVIDE INSTRUCTION TO EMPLOYEES AND SUBCONTRACTORS REGARDING REDUCTION OF POLLUTANTS INCLUDING MATERIAL STORAGE, USE, AND CLEAN UP. INSPECT SITE WEEKLY FOR EVIDENCE OF IMPROPER DISPOSAL.
- E. VEHICLE FUELING, MAINTENANCE AND CLEANING: PROVIDE A DESIGNATED FUELING AREA WITH SECONDARY CONTAINMENT SUCH AS BERMING. DO NOT ALLOW MOBILE FUELING OF EQUIPMENT. PROVIDE EQUIPMENT WITH DRIP PANS. RESTRICT ONSITE MAINTENANCE AND CLEANING OF EQUIPMENT TO A MINIMUM. INSPECT AREA WEEKLY.
- F. PORTABLE TOILETS SHALL BE LOCATED AWAY FROM ALL STORM DRAIN INLETS.
- G. GRADING OPERATIONS AND CONSTRUCTION SHALL BECONDUCTED IN A MANNER AND/OR MEASURES TAKEN TO PREVENT SAND, DUST, AND DEBRIS FROM BEING BLOWN ONTO OTHER PROPERTIES. AN ADEQUATE DUST PALLIATIVE SHALL BE USED AT ALL TIMES. AFTER COMPLETION OF GRADING THE DEVELOPER SHALL MAINTAIN THE SITE SUCH THAT SAND, DUST AND DEBRIS DO NOT BLOW ONTO OTHER PROPERTIES.
- H. TEMPORARY FENCING SHALL BE ERECTED AS REQUIRED BY CITY STAFF DURING CONSTRUCTION TO PREVENT WINDBLOWN DEBRIS FROM LEAVING THE PROJECT SITE AND TO ENSURE PUBLIC SAFETY.



POSSIBLE, AND SURROUNDING ALL STOCKPILED

CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE.

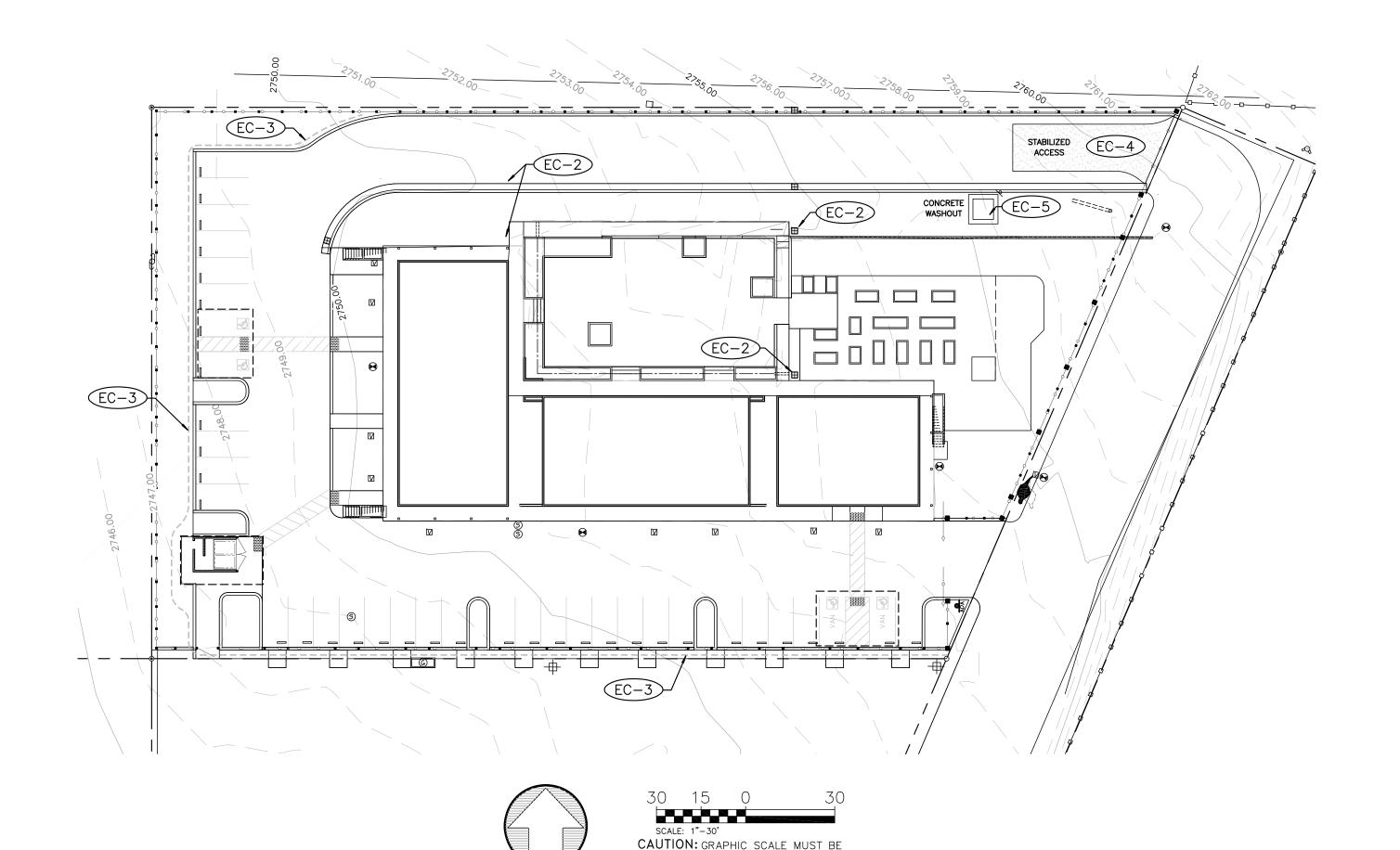
MOVE ENTRANCE AS NEEDED TO ALLOW ROOM FOR

RENT CONCRETE WASHOUT BIN AND PLACE IN A

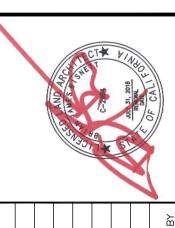
LOCATION ACCESSIBLY TO CONCRETE TRUCKS.

SEDIMENT OR SOIL.

CONSTRUCTION.



USED EXCEPT WHERE DIMENSIONED



 SCALE:
 NOTE
 NOTE

 DESIGNED:
 0 1/2 1

 DRAWN: JRS
 0 1/2 1

 CHECKED:
 BAR SHOULD MEASURE 1". OR DRAWING IS NOT TO SCALE 1". A 1 4-17-18

 NOT TO SCALE 1 4-17-18
 TOR REVIEW.

 APPROVED:
 1 4-17-18
 FOR REVIEW.

Bisn Desi 16046 Bear Court

ett gen cia

> CALIFORNIA TAINANIA

6-21-18

DRAWING::

RECOMMENDED PERFORMANCE GUIDELINE FOR EMULSIFIED ASPHALT SLURRY SEAL

SCOPE

The intent of this guideline is to aid in the design, testing, quality control, measurement and payment procedures for the application of Emulsified Asphalt Slurry Seal Surfacing.

2. DESCRIPTION

Slurry seal shall consist of a mixture of an emulsified asphalt, mineral aggregate, water, and additives, proportioned, mixed and uniformly spread over a properly prepared surface as directed by the Buyer's Authorized Representative (B.A.R.). The slurry seal shall be applied as a homogeneous mat, adhere firmly to the prepared surface, and have a skid-resistant texture throughout its service life.

3. SPECIFICATIONS

It is not normally required to run <u>all</u> tests on every project. A compilation of results from the listed tests should be indicative of system performance. Failure to meet specification for an individual test does not necessarily disqualify the system. If, for example, the system to be used on the project has a record of good performance, individual requirements for testing may be waived. Agency and testing methods are listed in the appendix (see Appendix A) and form a part of this guideline.

4. MATERIALS

4.1 EMULSIFIED ASPHALT

The emulsified asphalt, and emulsified asphalt residue, shall meet the requirements of AASHTO M 140 or ASTM D 977 for SS-1 or SS-1h. For CSS-1, CSS-1h, or CQS-1h, it shall meet the requirements of AASHTO M 208 or ASTM D 2397.

Each load of emulsified asphalt shall be accompanied with a Certificate of

Analysis/Compliance to indicate that the emulsion meets the specifications.

4.2 AGGREGATE

4.2.1 GENERAL

The mineral aggregate used shall be the type specified for the particular application requirements of the slurry seal. The aggregate shall be crushed stone such as granite, slag, limestone, chat, or other high-quality aggregate, or combination thereof. To assure the material is 100 percent crushed, the parent aggregate will be larger than the largest stone in the gradation to be used.

ISSA A105 Revised February 2010

If continuous-run equipment is used, the machine shall provide the operator with full control of the forward and reverse speeds during application of the slurry seal. It shall be equipped with a self-loading device and opposite-side driver stations. The self-loading device, opposite-side driver stations, and forward and reverse speed controls shall be of original-equipment-

manufacturer design. 6.3 PROPORTIONING DEVICES

Individual volume or weight controls for proportioning mix components shall be provided and properly labeled. These proportioning devices are used in material calibration to determine the material output at any time.

6.4 SPREADING EQUIPMENT

The mixture shall be placed uniformly by means of a spreader box attached to the paver and mechanically equipped, if necessary, to agitate and spread the material evenly throughout the box. With some quick-set systems, mechanical agitation may extend mix time. The slurry seal mixture shall have the proper consistency as it enters the spreader box. Spraying of additional water into the spreader box will not be permitted.

A front seal shall be utilized to ensure no loss of the mixture at the road contact point. The rear seal shall act as final strike-off and shall be adjustable. The spreader box and rear seal shall be designed and operated to provide uniform mix consistency behind the box. The spreader box shall have suitable means to side shift to compensate for variations in the pavement width. A burlap drag or other approved screed may be attached to the rear of the spreader box to provide a highly textured uniform surface. A drag stiffened by hardened slurry is ineffective and should be replaced immediately.

6.5 AUXILIARY EQUIPMENT

Suitable surface preparation equipment, traffic control equipment, hand tools, and other support and safety equipment necessary to perform the work shall be provided by the

7. CALIBRATION

Each mixing unit to be used in performance of the work shall be calibrated in the presence of the B.A.R. prior to the start of the project. Previous calibration documentation covering the exact materials to be used may be acceptable, provided the calibration was performed during the previous 60 days. The documentation shall include an individual calibration of each material at various settings, which can be related to the machine's metering devices. Any equipment replacement affecting material proportioning requires that the machine be recalibrated. No machine will be allowed to work on the project until the calibration has been accepted. ISSA Inspector's Manual describes a method of machine calibration. ISSA contractors and/or machine manufacturers may also provide methods of machine calibration.

Revised February 2010

ISSA A105

Revised February 2010

4.2.2 QUALITY TESTS

The aggregate should meet agency specified polishing values and these minimum

TEST	TEST METHOD		SPECIFICATION	
IEST	AASHTO	ASTM	SPECIFICATION	
Sand Equivalent Value of Soils and Fine Aggregate	T 176	D 2419	45 Minimum	
Soundness of Aggregates by Use of Sodium Sulfate of Magnesium Sulfate	T 104	C 88	15% Maximum w/NA ₂ SO ₄ 25% Maximum w/MgSO ₄	
Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine ¹	T 96	C 131	35% Maximum	

¹The abrasion test is run on the parent aggregate.

4.2.3 GRADATION

When tested in accordance with AASHTO T 27 (ASTM C 136) and AASHTO T 11 (ASTM C 117), the mix design aggregate gradation shall be within one of the following bands (or one recognized by the local paving authority):

	SIEVE SIZE	TYPE I PERCENT PASSING	TYPE II PERCENT PASSING	TYPE III PERCENT PASSING	STOCKPILE TOLERANCE FROM THE MIX DESIGN GRADATION
3/8	(9.5 mm)	100	100	100	
# 4	(4.75 mm)	100	90 - 100	70 - 90	± 5%
#8	(2.36 mm)	90 - 100	65 - 90	45 - 70	± 5%
# 16	(1.18 mm)	65 - 90	45 - 70	28 - 50	± 5%
# 30	(600 um)	40 - 65	30 - 50	19 - 34	± 5%
# 50	(330 um)	25 - 42	18 - 30	12 - 25	± 4%
#100	(150 um)	15 - 30	10 - 21	7 - 18	± 3%
#200	(75 um)	10 - 20	5 - 15	5 - 15	± 2%

The gradation of the aggregate stockpile shall not vary by more than the stockpile tolerance from the mix design gradation (indicated in the table above) while also remaining within the specification gradation band. The percentage of aggregate passing any two successive sieves shall not change from one end of the specified range to the other end.

The aggregate will be accepted at the job location or stockpile based on five gradation tests sampled according to AASHTO T 2 (ASTM D 75). If the average of the five tests is within the stockpile tolerance from the mix design gradation, the material will be accepted. If the average of those test results is out of specification or tolerance, the contractor will be given the choice to either remove the material or blend additional

ISSA A105 Revised February 2010

aggregate with the stockpile material to bring it into compliance. Materials used in blending must meet the required aggregate quality test specifications in Section 4.2.2 before blending and must be blended in a manner to produce a consistent gradation. Aggregate blending may require a new mix design.

Screening shall be required at the stockpile if there are any problems created by oversized materials in the mix.

Type I. This aggregate gradation is used to fill surface voids, address moderate surface distresses, and provide protection from the elements. The fineness of this mixture provides the ability for some crack penetration.

Type III. This aggregate gradation provides maximum skid resistance and an improved wearing surface.

Type II. This aggregate gradation is used to fill surface voids, address more severe

surface distresses, seal, and provide a durable wearing surface.

4.3 MINERAL FILLER

Mineral filler may be used to improve mixture consistency and to adjust mixture breaking and curing properties. Portland cement, hydrated lime, limestone dust, fly ash, or other approved filler meeting the requirements of ASTM D 242 shall be used if required by the mix design. Typical use levels are normally 0.0 - 3.0 percent and may be considered part of the aggregate gradation.

4.4 WATER

The water shall be free of harmful salts and contaminants. If the quality of the water is in question, it should be submitted to the laboratory with the other raw materials for the mix

4.5 ADDITIVES

Additives may be used to accelerate or retard the break/set of the slurry seal. Appropriate additives, and their applicable use range, should be approved by the laboratory as part of the mix design.

5. LABORATORY EVALUATION

5.1 GENERAL

Before work begins, the contractor shall submit a signed mix design covering the specific materials to be used on the project. This design will be performed by a laboratory which has experience in designing Emulsified Asphalt Slurry Seal Surfacing. After the mix design has been approved, no material substitution will be permitted unless approved by the B.A.R.

ISSA can provide a list of laboratories experienced in slurry seal design.

ISSA A105

8. WEATHER LIMITATIONS

The slurry seal shall not be applied if either the pavement or air temperature is below 50°F (10°C) and falling, but may be applied when both pavement and air temperatures are above 45°F (7°C) and rising. No slurry seal shall be applied when there is the possibility of freezing temperatures at the project location within 24 hours after application. The mixture shall not be applied when weather conditions prolong opening to traffic beyond a reasonable time.

9. NOTIFICATION AND TRAFFIC CONTROL

9.1 NOTIFICATION

Homeowners and businesses affected by the paving shall be notified at least one day in advance of the surfacing. Should work not occur on the specified day, a new notification will be distributed. The notification shall be posted in written form, stating the time and date that the surfacing will take place. If necessary, signage alerting traffic to the intended project should be posted

9.2 TRAFFIC CONTROL

Traffic control devices shall be in accordance with agency requirements and, if necessary, conform to the requirements of the <u>Manual on Uniform Traffic Control Devices</u>. Opening to traffic does not constitute acceptance of the work.

In areas that are subject to an increased rate of sharp-turning vehicles, additional time may be required for a more complete cure of the slurry seal mat to prevent damage. Tire marks may be evident in these areas after opening but typically diminish over time with rolling traffic

10. SURFACE PREPARATION

10.1 GENERAL

Prior to applying the slurry seal, loose material, oil spots, vegetation, and other objectionable material shall be removed. Any standard cleaning method will be acceptable. If water is used, cracks shall be allowed to dry thoroughly before slurry surfacing. Manholes, valve boxes, drop inlets and other service entrances shall be protected from the slurry seal by a suitable method. The B.A.R. shall approve the surface preparation prior to surfacing.

10.2 TACK COAT

Normally, tack coat is not required unless the surface to be covered is extremely dry and raveled or is concrete or brick. If required, the emulsified asphalt should be SS, CSS, or the slurry seal emulsion. Consult with the slurry seal emulsion supplier to determine dilution stability. The tack coat may consist of one part emulsified asphalt/three parts water and should be applied with a standard distributor. The distributor shall be capable of applying the dilution evenly at a rate of 0.05-0.15 gal/yd² (0.23-0.68 l/m²). The tack coat shall be allowed to cure sufficiently before the application of slurry seal. If a tack coat is to be required, it must be noted in the project plans.

10.3 CRACKS

ISSA A105 Revised February 2010

It is recommended to treat cracks wider than 0.25" (0.64cm) in the pavement surface with an approved crack sealer prior to application of the slurry seal.

11. APPLICATION 11.1 GENERAL

If required, it is recommended that a test strip be placed in conditions similar to those expected to be encountered during the project.

The surface may be wetted with water ahead of the spreader box. The rate of application of the water spray shall be adjusted during the day to suit temperature, surface texture, humidity, and dryness of the pavement. Pooling or standing water shall be avoided.

The slurry seal shall be of the desired consistency upon exiting the mixer. A sufficient amount of material shall be carried in all parts of the spreader box at all times so that complete coverage is achieved. Overloading of the spreader shall be avoided.

No lumping, balling, or unmixed aggregate shall be permitted.

Significant streaks, such as those caused by oversized aggregate or broken mix, shall not be left in the finished surface. If excessive streaking occurs, the job will be stopped until the cause of the problem has been corrected. Some situations may require screening the aggregate prior to loading it into the units going from the stockpile area to the jobsite.

11.2 RATE OF APPLICATION

The slurry seal mixture shall be of the proper consistency at all times so as to provide the application rate required by the surface condition. The average application rate shall be in accordance with the following table:

AGGREGATE TYPE	AGGREGATE TYPE LOCATION SUGGESTED APPLICA	
Туре І	Parking Areas Urban and Residential Streets Airport Runways	8 - 12 lb/yd² (4.3 - 6.5 kg/m²)
Туре II	Urban and Residential Streets Airport Runways	10 - 18 lb/yd² (5.4 - 9.8 kg/m²)
Type III	Primary and Interstate Routes	15 - 22 lb/yd² (8.1 - 12.0 kg/m²)

Suggested application rates are based upon the weight of dry aggregate in the mixture. Application rates are affected by the unit weight and gradation of the aggregate and the demand of the surface to which the slurry seal is being applied.

11.3 JOINTS

ISSA A105 Revised February 2010

5.2 MIX DESIGN

Compatibility of the aggregate, emulsified asphalt, water, mineral filler and other additives shall be evaluated in the mix design. The mix design shall be completed using materials consistent with those supplied by the contractor for the project. Recommended tests and values are as follows:

TEST	ISSA TB NO.	SPECIFICATION
Mix Time @ 77°F (25°C)	TB 113	Controllable to 180 Seconds Minimum
Slurry Seal Consistency	TB 106	0.79 – 1.18 inches (2.0 – 3.0 cm)
Wet Cohesion @ 30 Minutes Minimum (Set) @ 60 Minutes Minimum (Traffic)	TB 139 (For quick-traffic systems)	12 kg-cm Minimum 20 kg-cm or Near Spin Minimum
Wet Stripping	TB 114	Pass (90% Minimum)
Wet-Track Abrasion Loss One-hour Soak	TB 100	75 g/ft² (807 g/m²) Maximum
Excess Asphalt by LWT Sand Adhesion	TB 109 (Critical in heavy-traffic areas)	50 g/ft² (538 g/m²) Maximum

The Wet Track Abrasion Test is performed under laboratory conditions as a component of the mix design process. The purpose of this test is to determine the minimum asphalt content required in a slurry seal system. The Wet Track Abrasion Test is not recommended as a field quality control or acceptance test. ISSA TB 136 describes potential causes for inconsistent results of the Wet Track Abrasion Test.

The mixing test is used to predict the time the material can be mixed before it begins to break. It can be a good reference check to verify consistent sources of material. The laboratory should verify that mix and set times are appropriate for the climatic conditions expected during the project.

The laboratory shall also report the quantitative effects of moisture content on the unit weight of the aggregate (bulking effect) according to AASHTO T19 (ASTM C29). The report must clearly show the proportions of aggregate, mineral filler (if used) and emulsified asphalt based on the dry weight of the aggregate.

The percentages of each individual material required shall be shown in the laboratory report. Based on field conditions, adjustments within the specific ranges of the mix design may be required.

Revised February 2010

ISSA A105

No excess buildup, uncovered areas, or unsightly appearance shall be permitted on longitudinal or transverse joints. The contractor shall provide suitable equipment to produce a minimum number of longitudinal joints throughout the project. When possible, a longitudinal joint shall not be placed in a wheel path. Less than full box width passes will be used only as required. If less than full box width passes are used, they shall not be the last pass of any paved area. A maximum of 6" (15.2 cm) shall be allowed for overlap of longitudinal joints.

11.4 MIXTURE

The slurry seal shall possess sufficient stability so that premature breaking of the material in the spreader box does not occur. The mixture shall be homogeneous during and following mixing and spreading. It shall be free of excess liquids which create segregation of the aggregate. Spraying of additional water into the spreader box will not be permitted.

11.5 HANDWORK

Areas which cannot be accessed by the mixing machine shall be surfaced using hand squeegees to provide complete and uniform coverage. If necessary, the area to be handworked shall be lightly dampened prior to mix placement. Handwork shall exhibit the same finish as that applied by the spreader box and shall be completed prior to final surfacing.

11.6 LINES

Care shall be taken to apply straight lines along curbs, shoulders, and intersections. No run-off on these areas will be permitted. Roofing felt or heavy plastic may be used to begin or end a pull cleanly. This also provides for easy removal of excess slurry.

11.7 ROLLING

Rolling is usually not necessary for slurry seal on roadways. Airports and parking areas should be rolled by a self-propelled, 10-ton (maximum) pneumatic tire roller equipped with a water spray system. All tires should be inflated per manufacturer's specifications. Rolling shall not start until the slurry has cured sufficiently to avoid damage by the roller. Areas which require rolling shall receive a minimum of two (2) full coverage passes.

All utility access areas, gutters and intersections, shall have the slurry seal removed as specified by the RAR. The contractor shall remove any debris associated with the

11.8 CLEAN UP

specified by the B.A.R. The contractor shall remove any debris associated with the performance of the work on a daily basis.

12. QUALITY CONTROL

12.1 INSPECTION

Inspectors assigned to projects must be familiar with the materials, equipment and application of slurry seal. Local conditions and specific project requirements should be considered when determining the parameters of field inspection.

Proper mix consistency should be one of the major areas of inspector concern. If mixes are

10

ISSA A105 Revised February 2010

The component materials shall be designed within the following limits:

COMPONENT MATERIALS	SUGGESTED LIMITS	
	Type I: 10 - 16%	
Residual Asphalt	Type II: 7.5 - 13.5%	
Section (Section 1984)	Type III: 6.5 - 12%	
	(Based on dry weight of aggregate)	
Mineral Filler	0.0 - 3.0%	
	(Based on dry weight of aggregate)	
Additives	As needed	
Water	As required to produce proper mix consistency	

5.3 MIX TOLERANCES

Tolerances for the slurry seal mixture are as follows:

- After the residual asphalt content is determined, a variation ±1% by weight of dry aggregate will be permitted.
- The slurry consistency, as determined according to ISSA TB No. 106, shall not vary more than ± 0.2" (± 0.5 cm) from the job mix formula after field adjustments.
- c. The rate of application shall not vary more than ± 2 lb/yd² (± 1.1 kg/m²) when the surface texture does not vary significantly.

6. <u>EQUIPMENT</u>

6.1 GENERAL

All equipment, tools, and machines used in the application of slurry seal shall be maintained in satisfactory working condition at all times.

6.2 MIXING EQUIPMENT

The machine shall be specifically designed and manufactured to apply slurry seal. The material shall be mixed by an automatic-sequenced, self-propelled, slurry seal mixing machine of either truck-mounted or continuous-run design. Continuous-run machines are those that are equipped to self-load materials while continuing to apply slurry seal. Either type machine shall be able to accurately deliver and proportion the mix components through a mixer and to discharge the mixed product on a continuous-flow basis. Sufficient storage capacity for all mix components is required to maintain an adequate supply to the proportioning controls.

The B.A.R. should decide which type of equipment best suits the specific project. In some cases, truck-mounted machines may be more suited, i.e. cul-de-sacs, small narrow roadways, parking lots, etc. On some projects, continuous-run equipment may be chosen due to the continuity of mix and the reduction of start-up joints. Generally, truck-mounted machines or continuous-run machines may be used on similar projects.

ISSA A105

Revised February 2010

too dry, streaking, lumping and roughness will be present in the mat surface. Mixes applied too wet will flow excessively and not hold straight lane lines. Excessive liquids may also cause an asphalt-rich surface with segregation.

12.2 MATERIALS

To account for aggregate bulking, it is the responsibility of the contractor to check stockpile moisture content and to set the machine accordingly. At the B.A.R.'s discretion, material tests may be run on representative samples of the aggregate and emulsion. Tests will be run at the expense of the buyer. The buyer must notify the contractor immediately if any test fails to meet the specifications.

12.3 SLURRY SEAL

If required, representative samples of the slurry seal may be taken directly from the slurry unit(s). Consistency (ISSA TB No. 106) and residual asphalt content (ASTM D2172) tests may be run on the samples. Please note that the consistency test may not be applicable to certain Quick-Set and Quick-Traffic systems because of erratic results due to setting characteristics. If this test is run, it must be performed immediately after the sample is taken. Tests will be run at the expense of the buyer. The buyer must notify the contractor immediately if any test fails to meet specifications.

Data obtained from the proportioning devices on the slurry seal unit may be used to determine individual material quantities and application rate.

12.4 NON-COMPLIANCE

If any two successive tests fail on the stockpile aggregate, the job shall be stopped. If any two successive tests on the mix from the same machine fail, the use of the machine shall be suspended. It will be the responsibility of the contractor, at his expense, to prove to the B.A.R. that the problems have been corrected.

13. PAYMENT

The slurry seal shall be measured and paid for by the unit area or weight of aggregate and the weight of emulsion used on the work completed and accepted by the buyer. If paid by the weight of the aggregate and emulsified asphalt, the contractor shall submit to the B.A.R. certified delivery tickets which show quantities of each material delivered to the job site and used on the project. Payment shall be full compensation for all preparation, mixing and application of materials, and for all labor, equipment, tools, testing, cleaning, and incidentals necessary to complete the job as specified herein.

OTE

1/2

DULD MEASURE

DRAWING IS

TO SCALE

1 4-17-18

SIGNED:

AWN: JRS

ECKED:

PROVED:

1" OI

isnett esign ssociates

346 Bear Court ass Valley, CA 95949 0.277.9733 an@bisnettdesign.com

LE, CALIFORNIA

DESERT HAVEN VICTORVILLE,

6-21-18

RAWING::

= 13