

LEWIS ENGINEERING

GRADING AND DRAINAGE PLAN

NI RESIDENCE

1221 LOMITA LANE, CARPINTERIA, CA. 93013
A.P.N. 001-190-036

SITEWORK SPECIFICATIONS

2010 GENERAL REQUIREMENTS

2011 SCOPE: The proposed work consists of the following: Earthwork, storm drainage, utilities, paving and related sitework.

2012 DETAIL: The drawings are intended to show or reference all details necessary to construct the proposed work. The contractor shall review these drawings and determine prior to commencement of construction what other details or class of information is necessary for the engineer to have sufficient time to provide any additional information prior to construction.

2013 EXISTING CONDITIONS: The contractor shall verify all existing conditions and measurements shown on the drawings and report any differences to the engineer prior to construction.

2014 PROTECTION OF FACILITIES: The contractor shall be responsible for all on and off site structures, streets, utilities and landscaping.

2015 SURVEYING: The contractor shall provide for all surveying required to locate property lines, set flux lines of pipes and gutters to obtain new final grades and any other surveying required to construct the improvements.

2016 PERMITS: The contractor shall pay for all permits, licenses and fees required by the governing agencies except, the owner shall pay for the general building and grading permits. The contractor may be required to sign the general building and grading permits.

2017 INSPECTION: The contractor shall be responsible for requesting, coordinating and obtaining all inspections required by the local building codes. Allow 24 hours advance notice.

2018 SPECIAL INSPECTION: Special testing and inspection by a certified material test laboratory or licensed geotechnical inspector may be required on non-native soils. The contractor shall be responsible for requesting, coordinating and obtaining all inspections and testing as may be required. The owner shall pay for the initial testing and inspection. Any additional testing and inspection required by the contractor's performance or scheduling shall be paid by the contractor.

1. Observe the excavation to determine that the depth of excavation and bottom of the subgrade are suitable.
2. Observe the exposed subgrade and keyway in areas to receive fill and in areas where excavation has resulted in the desired finished subgrade, observe proof rolling and delineate areas requiring additional excavation.
3. Perform visual inspection to evaluate the suitability of on-site and imported soils for fill placement; collect and submit soil samples for laboratory testing.
4. Perform field density and compaction testing to determine the appropriate fill material achieved during placement of fills.
5. Observe and probe foundation bearing materials to confirm that suitable bearing materials are present at the design grades.
6. Observe and test the backfill of utility trenches.
7. Observe and test the construction of the subgrade and base for exterior paving.

2019 RECORD KEEPING: The contractor shall keep a set of the proposed drawings, permits and contract documents in a protected on site location at all times and shall keep daily field reports of all special inspection and testing.

2020 AS BUILT DRAWINGS: The contractor shall keep accurate as-built drawings of all work as required such that drawings to the engineer may be provided to the owner.

2021 AUTHORIZED CHANGES: The engineer shall review and approve any changes to the drawings or specifications prior to grading.

2022 CODE REQUIREMENTS: All work shall be performed in accordance with the latest edition of governing codes and local ordinances unless specifically noted otherwise in the drawing or specification.

2023 PLAN COORDINATION: The contractor shall refer to the project architectural drawings and specifications including those for site layout, building, mechanical, electrical and landscape improvements and for interfacing with all improvements called for therein.

2024 UNDERGROUND UTILITIES: The contractor shall make a thorough search for all underground structures and utilities and shall request all utility agencies to locate all underground structures and utilities prior to excavation. Call the underground service alert (2) full days in advance of commencing construction at 811.

2025 CLEAN UP: Remove all waste, debris, excess materials, tools and equipment from the premise.

2050 DEMOLITION

2051 REMOVAL: Specific existing improvements shall be removed as required to construct new improvements. Where required the improvements to be removed shall include disconnection and capping of utility lines serving the improvements and any foundation structures supporting such improvements.

2052 UTILITIES: Location of existing utilities may or may not be shown in their entirety or exact location on the drawing. Contractor shall determine actual extent and location of utilities. Contractor shall coordinate disconnection of utilities with the utility companies and owners. Where shown on the drawings, utilities may be abandoned in place, unless they conflict with new improvements. Contractor shall provide for temporary disconnect wire reconnection is required.

2053 SALVAGING OF MATERIALS: Where saving of materials to be removed is required, the contractor shall deliver materials to an on site storage location designated by the owner.

2054 PAVEMENT: Where required by the drawings, certain sections of pavement shall be replaced or removed. The contractor and engineer shall meet at the site and designate the specific areas to be replaced or removed. All cuts in pavement shall be made by sawcutting to create straight and neat joints.

250 SITE CLEARING

2552 STRIPPING: Areas of the site to be built upon, paved, excavated or re-leveled, cleared shall be stripped to remove all existing surface vegetation and organic debris. Stripping depth should be determined in the field. However, for plan purposes, an average stripping depth of 4 inches that will extend 5 feet horizontally beyond the proposed building lines, and 3 feet vertically beyond the edges of the property line may be assumed. Stripings should be properly disposed of off site.

2200 SHORING AND BRACING

2201 SHORING AND BRACING: The contractor shall be responsible for all excavation including shoring and protecting of adjacent property, structures, streets, utilities.

2202 SHORING: The contractor is responsible for the design and construction of any shoring required to meet OSHA requirements.

2250 EARTHWORK

SANTA BARBARA COUNTY GRADING NOTES:

- All grading shall conform with Santa Barbara County Code Chapter 14 and standards and requirements pertaining thereto, these construction drawings and the recommendations of the local engineering office and county engineer.
- Contractor to notify the county grading inspector and soils laboratory at least 48 hours before start of grading work or any pre-construction meeting.
- Contractor shall employ labor, equipment and methods required to prevent operations from producing dust in amounts damaging to adjacent property, cultivated vegetation and domestic animals or causing a nuisance to persons occupying buildings in the vicinity of the job site. Contractor shall be responsible for damage caused by dust from his grading operation.

- Before beginning work, requiring exporting or importing of material, the contractor shall contact the Santa Barbara Public Works Road Division for haul routes, load and methods provided to minimize the deposit of soils on country roads. Grading/road inspectors shall monitor this requirement with a contractor.
- The geotechnical engineer shall provide observation and testing during grading operations in the field and shall submit a final report stating that all earth work was properly completed and is in substantial conformance with the requirements of the grading ordinance.
- Areas to be graded shall contain all vegetation including roots and all insulating material for a structural fill, then scarified to a depth of 6" prior to placing of any fill. Call grading inspector for initial inspection.
- Areas to be graded shall contain all man-made facilities such as septic tank systems, fuel or water storage tanks, and pipelines or conduits. Any such facilities encountered shall be removed and the depression properly filled and compacted under observation of the geotechnical engineer.
- Areas with existing slopes which are to receive fill material shall be keyed and bancheted. The design and installation of the keyway shall be per the geotechnical engineer's standard no. 6-13.
- Fill material shall be spread in lifts not exceeding 6" in compacted thickness, moistened or dried as necessary to near optimum moisture content and compacted by an approved method. The fill material shall be tested for 95% relative compaction as determined by ASTM D-1557 test method, modified proctor (AASHTO) test or similar approved methods. Some fill areas may require compaction to a greater density if called for in the construction documents. Soil tests shall be conducted on each lift and one test for each 18" of fill and/or for each 500 cubic yards of fill placed.
- Cut slopes shall not exceed a grade of 2 horizontal to 1 vertical. Fill and combination fill and cut slopes shall not exceed a grade of 1 vertical. Slopes over three feet in vertical height shall be protected with approved permanent or treated with equally approved erosion control measures prior to final inspection.
- Surface drainage shall be provided at a minimum of 2% for 5 feet from the proposed foundation line or any structure.
- All trees that are to remain on site shall be temporarily fenced and protected around the dripline during grading.
- An erosion and sediment control shall be required as part of the grading plan and shall be required to be installed.
- Beach Monofilament Protection: Construction Activities: Eroded sediments and other pollutants must be retained onsite and may not be transported from the site via sheet flow, swale, area drains, storm drainage conveyances, or water sheds. Sediment and other construction materials and materials must be protected from being transported from the site by the forces of wind or water. Fuels, oils, solvents, and other toxic materials must be stored in accordance with their listing and/or handling requirements. All approved storage containers are to be protected from the weather. Spills may not be washed into the drainage system. Excess or waste concrete may not be washed into public or private other drainage systems unless arrangements are made to retain the waste on site until it can be transported as a solid waste. Trash and construction related solid waste must be deposited into a covered waste receptacle to prevent contamination of runoff and dispersal by wind. Settlement control measures may be required to the site due to vehicle traffic. The construction entrance roadways must be stabilized so as to inhibit sediments from being deposited into the public way. Accidental deposition must be swept up immediately and may not be washed down by rain or other means. Any signs of erosion or soil loss should be treated if vegetation must be stabilized as to minimize erosion by wind and water."
- If grading occurs during Nov. 1 through Apr. 15, no grading shall occur unless approved erosion and sediment control measures are in place. Discharges of sediment from the project site may result in a "Stop Work Order".
- All earthwork on hillsides, sloping or mountainous terrain shall be planned and prevent loss of soils, as necessary, year-round.
- Earthwork estimates (for permit purposes)

- | Traffic Index | Asphalt Concrete (inches) | Class 2 Aggregate Base (inches) |
|---------------|---------------------------|---------------------------------|
| 4 | 2.5 | 4.0 |
| 5 | 2.5 | 4.0 |
| 5.5 | 2.5 | 4.0 |
| 6 | 2.5 | 4.0 |

- Pavement sections consisting of the following dimensions are recommended, assuming Traffic Indices of 4, 5, 5.5, and 6, and an R-value of 67.

- Beneath the proposed parking areas, we recommend the top loose surface soils be removed from below the proposed final soil subgrade elevation, moistened or dried to 10% or near optimum moisture content and compacted to 95% relative compaction. Asphalt concrete shall be placed over the foundation system of the proposed structure.
- Positive surface drainage shall direct water away from all slopes and away from the foundation system of the proposed structure.
- French drain shall be PVC or ABS smooth wall non corrugated with holes (not slots) at 60 and 120. Holes shall be placed at 4 O'clock and 8 O'clock.
- The french drain should be placed on the outside of the continuous footing in the areas to be protected. It should consist of a minimum 4" rigid PVC perforated pipe at the bottom of a 12" wide trench filled with 3" of clean, clean gravel. The gravel shall be wrapped with a filter fabric. The trench should penetrate to the bottom of the footing elevation.
- FILTER FABRIC: Shall be a non woven geotextile fabric with high flow capacity and small pore size such as Mirafi 140 N. or equal. The fabric shall be installed in accordance with the manufacturers requirements.
- GRAVEL FILTER: Shall be 3 1/4" diameter round rock.
- UNDERGROUND STORM WATER STORAGE SYSTEM: Shall be prefabricated, high capacity, arch shaped, open bottom, traffic rated chambers molded from HDPE (plastic or equal) as manufactured by ABS or Gutter. Submit shop drawings.

2100 ELECTRICAL, CABLE, TELEPHONE SYSTEM

- 2101 EXISTING: Site extent and location of the existing underground electrical cable or telephone system has not been on the drawings but is known to exist.

- 2102 DRAWINGS: A separate underground electrical, cable and telephone plan has been prepared by others.

- 2103 COORDINATION: The contractor shall coordinate the electrical, cable and telephone conduit and wire installation with the other underground pipes shown on the plan. Gravity flow pipeline systems shall be installed before electrical, cable and telephone conduits.

2175 INTERLOCKING CONCRETE PAVERS (non-permeable)

- 2176 UTILITY TRENCHES: All excavation work including that for water, sewer, storm drain and utility conduits and all service connections and related boxes (not listed below) shall be completed and the structural backfill, compacted and tested for compaction and approved before aggregate base, paving and other permanent surface construction may commence.

- 2177 EARTHWORK: Compaction of pavement subgrade and base courses shall be tested for compliance with applicable requirements by the project soils engineer.

- 2178 DEPTH OF COMPACTION: Actual depth of subgrade recompaction shall be determined by the soils engineer, but is estimated to be 18 inches.

- 2179 PRELIMINARY PAVEMENT DESIGN: Permeable paving shall have a minimum structural section as follows:

- PAVERS: Shall be 3 1/8" thick concrete or masonry pavers per architect. Pavers shall set on 1" clean sand over 4" crushed rock base over 18" earth subgrade. All compacted to 95% relative density. Pavers shall be installed tight and neat in a pattern as determined by architect. Backfill shall be in accordance with manufacturer's requirements, submit manufacturer data for architect/engineer approval.

- 2180 ACTUAL PAVEMENT DESIGN: The actual pavement structural section shall be based on R-value tests by the soils engineer.

- 2181 RECOMPACT: Earth subgrade and Class II aggregate base shall be recompacted to 95% relative density per ASTM D-1557.

- 2182 AGGREGATE BASE: Aggregate base shall conform to Caltrans Standard Specifications for Class II base.

2200 PORTLAND CEMENT CONCRETE PAVING

- 2201 CODE REQUIREMENTS: All concrete construction shall be installed in accordance with the ACI standards of practice.

- 2202 EXPANSION JOINTS: Expansion joints shall be installed wherever concrete is separated from existing such as where a abut other concrete structures. Existing structures that joints shall be preimplanted, elastic resilient material 3/4" thick.

- 2203 CONTROL JOINTS: Control joints shall be placed at 15-20 ft. intervals and shall be 3/4" to 1" deep. Consult with engineer for finish appearance.

- 2204 CURING: The contractor shall determine curing methods to provide complete and careful curing of all concrete work.

- 2205 LAYOUT: Plan elevations shown on walkways are for drainage and rough grading design only. It shall be contractor's responsibility to perform detailed layout for and to construct walkways, ramps, and steps in conformance with all building code requirements including those for dimensioning and surface texture.

- 2206 SLOPES: Concrete surfaces shall not exceed 1% longitudinally and 1% transversely unless shown otherwise on the plan.

- 2207 PAVEMENT DESIGN: Concrete flatwork shall have a minimum structural section as follows:

- | EARTH LOCATION | SUBGRADE | BASE | CONCRETE STRENGTH | CONCRETE REINFORCEMENT |
|---------------------|-----------|---------|---|------------------------|
| Tennis court | 1' recomp | 6" CLII | Post tension per tennis court installer | |
| Shed Slab | 1' recomp | 4' sand | 2500 psi | #3's @ 24" oocew |
| Walks/patio/terrace | 1' recomp | 4' sand | 2500 psi | #3's @ 24" oocew |

- 2208 RECOMPACT: Earth subgrade and base shall be recompacted to 95% relative compaction per ASTM D-1557.

- 2209 FINISHING: Concrete flatwork shall have the following finishes unless specified otherwise by the Architect:

- | LOCATION | FINISH |
|---------------------|----------------------------|
| Tennis court | per tennis court installer |
| Slab | brown finish |
| Walks/patio/terrace | standard colored & scored |

SPEC CONT. ON C.I.

- For storm drain pipe greater than 6" in diameter use heavy duty, non-perforated corrugated HDPE pipe with smooth lining as manufactured by Advanced Drainage Systems N-12 or equal.

- PVC (Polyvinyl Chloride) Pipe shall conform to the requirements of ANSI/ASTM D3034-10, Type II PVC for gravity flow sewers and shall be SDR 35. Gaskets shall be flexible elastomeric seals meeting the requirements of ASTM D3212-77.

- 2550 TESTING: Under ground storm drainage system, shall be water pressure tested prior to converting pipes.

- 2551 CODE REQUIREMENTS: All private storm drain improvement materials and construction methods shall be in accordance with these drawings and the requirements of the local building department.

- 2552 TRENCHING: For bedding and backfill material see Section 2350.

- 2553 GRATES: Grates located in paved areas shall be cast iron. Grates located in vehicle travelways shall be rated for heavy traffic loading, shall be bicycle proof, and shall be cast iron as manufactured by Alhambra Foundry or the Neenan Foundry Co. or equal.

- 2554 GRATES: Grates for non metallic drain boxes shall be PVC or ABS or PE or equal and shall be matched to fit the drain box.

- Grates in hard surfaced patio areas shall be brass or bronze grate and frame as manufactured by the Zurn company or equal. Contractor to submit shop drawings of all grates to engineer for approval prior to installation.

- 2556 DRAINAGE DITCHES: Where rock in mortar drainage ditches adjacent to road pavement occurs, use 4-6 diameter sandstone boulders of dressed stone set in 4" grout (2000 psi @ 28 days) with 6x6, 10x10 w/w mesh.

2250 STORM SEWAGE SYSTEMS

- 2251 STORM DRAINAGE: Prior to commencement of storm drainage installation, the contractor and engineer shall meet to review the proposed storm drainage plan.

- 2252 SCHEDULING: Contractor shall schedule gravity pipeline work ahead of other underground conduit construction.

- 2253 LAYOUT: Gravity storm drain work shall begin at the lowest point and proceed upstream.

- 2254 CONCRETE: Concrete for all drainage facilities shall be 2000 psi @ 28 days.

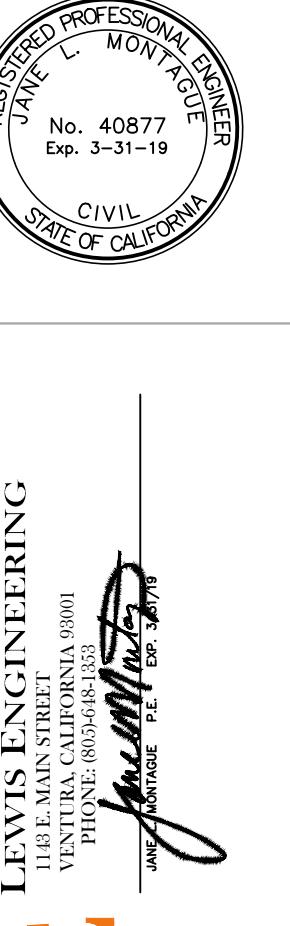
- 2255 NON METALLIC PIPE: Storm drain piping 6" diameter and less, unless specifically noted otherwise shall be non perforated, heavy duty smooth wall poly polyethylene pipe conforming to ASME B36.10M. The pipe shall be rated for 2000 psi. Corrugated pipe may be used from the downstream to the collector drain line. Fittings shall be heavy duty polyethylene and selected to fit pipe and drain boxes. Unless noted otherwise, all pipe shall be laid at a minimum 1/4" per foot slope.

- For storm drain pipe greater than 6" in diameter use heavy duty, non-perforated corrugated HDPE pipe with smooth lining as manufactured by Advanced Drainage Systems N-12 or equal.

- PVC (Polyvinyl Chloride) Pipe shall conform to the requirements of ANSI/ASTM D3034-10, Type II PVC for gravity flow sewers and shall be SDR 35. Gaskets shall be flexible elastomeric seals meeting the requirements of ASTM D3212-77.

- 2256 TESTING: Under ground storm drainage system, shall be water pressure tested prior to converting pipes.

- 2257 CODE REQUIREMENTS



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SITEWORK SPECIFICATIONS CONT.

2015 RETAINING WALL

- 2816 EXCAVATION: Footings shall be placed in firm natural ground.
- 2817 EXCAVATION INSPECTION: Soils engineer shall inspect all footing excavations before installing reinforcing steel or forms.
- 2818 CONCRETE: Concrete shall be 2500 psi @ 28 days conforming to ASTM C109.
- 2819 REBAR: Shall be ASTM A 615, grade 60 for #5 bars and larger, grade 40 for #4 bars and smaller.
- 2820 REBAR SPLICE: Minimum rebar splice shall be 40 bar diameters. Stagger splices in adjacent bars by the length of the splice.
- 2821 MORTAR: Mortar shall be type M or S.
- 2822 MASONRY: Masonry shall be $F_h = 1500$ psf.
- 2823 GROUT: Grout all cells. Grout shall be 2000 psi @ 28 days.
- 2824 EXPANSION JOINTS: Walls which are not adjacent to the building shall have expansion joints at a maximum spacing of 30' feet on center.
- 2825 WATERPROOFING: Walls shall be waterproofed per the architect's requirements.
- 2826 BACKFILLING: Backfill shall be free-draining granular soil. Compact to 90% relative density. Allow wall to gain 21 days strength before backfilling, if backfill supports driveway compact to 95% relative density.
- 2827 DRAINS: Provide continuous 4" perforated ABS drain line below the bottom of the wall sloped 1% towards outlet. Contractor shall provide filter blanket in gravel bed to prevent plugging of perforations.
- 2828 BLOCK: Concrete blocks shall conform to ASTM C90.
- 2829 EXPANSION JOINTS: Provide vertical expansion joints at max. 30' intervals by placing rubber-strip or celotex for full vertical ht. of wall. Longitudinal steel to terminate on each side of joint.
- 2830 CODE: All work shall be accordance with 2016 CBC.
- 2831 SPECIAL INSPECTION: Special inspection is required for the following retaining wall works:

 - A. Footing excavation

2900 FENCING

- 2401 REMOVAL: Where fences removal is required per the drawings, fence material shall be saved to the practical extent and neatly stockpiled in a location approved by the owner. Damage fencing and/or concrete bases shall be properly disposed off-site.
- 2405 Fencing and fence design shall be provided by tennis court installer.

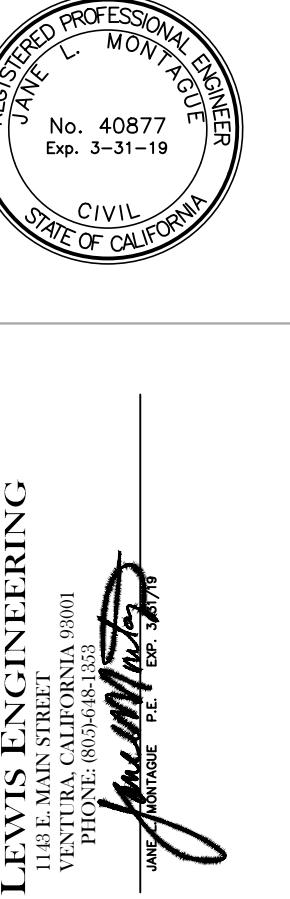
2920 LANDSCAPING

- 2421 DRAWINGS: Landscape drawings showing planting, irrigation, and miscellaneous features have been prepared by others.
- 2422 COORDINATION OF IMPROVEMENTS: The contractor shall be responsible for the coordination of the landscape drawings with the other site development drawings.
- 2423 EROSION CONTROL: The owner shall be responsible for erosion control of the regarded hillside by one of the following:
 - I) HYDROSEEDING: Consisting of the following:
 - a) Hydraulic Planting Mulch with wood cellulose fiber (to be approved by the engineer)
 - b) Seed Mix: Seed mix shall be 90% purity with an 85% germination rate. The actual seed mix shall be selected based on its erosion control ability, maintenance requirements, ornamentation and cost.
 - c) Fertilizer: A fertilizer formulation shall be incorporated into the hydroseeding slurry and shall be based on a soil analysis!
 - d) Tackifier: A powdered organic glue shall be added to the hydroseeding slurry or within the planting mulch.
 - e) Application: The hydroseed contractor shall be appropriately licensed, insured and provide references.
 - f) Maintenance: Hydroseed maintenance shall be agreed upon by the owner and contractor.
- 2) LANDSCAPE PLANTING AND IRRIGATION: In lieu of hydroseeding the owners may elect to consult with a landscape architect to prepare a planting and irrigation plan that will provide erosion control with drought tolerant and fire retardant plants.

2415 EROSION CONTROL

- 2416 CATCH BASIN PROTECTION: A filter system shall be used on catch basin (drop inlets) in public and private streets, and parking areas as a means of sediment control. Alternate methods will require the approval of the city.
- 2417 SEDIMENT FILTER / BARRIERS: For all projects, a silt fence or straw wattle disk shall be installed along the down slope edge of the disturbed area prior to the construction of the project. The location of filter structures will be located so that all runoff from the construction site is filtered, or passes through a sediment detention basin prior to crossing a property line entering a creek or entering the city storm drain body. Sediment filter structures are to be inspected regularly by the city inspection staff during inspection scheduled by the contractor or engineer of record, and sediment removed when the depth of sediment reaches one-half the height of the structure. Silt fences and straw wattles shall be installed according to the standards referenced cited.
- 2418 SILT FENCES: Should be installed where sediment from sheet flow or rain and gully erosion will enter directly onto adjacent property. When installing it is important that the fabric material be anchored into a trench and backfilled. Maintenance of filter fences is similar to that of straw wattles in that the fabric must be inspected and repaired immediately after every storm event. Sediment deposits should be removed when material reaches no more than a depth of one-half the fence height.
- 2419 PROTECTION OF EXISTING VEGETATION: As far as is practicable, existing vegetation shall be protected and left in place. In accordance with the clearing limits shown on the site plan, particularly grading or public works and erosion control plans. The exception is where exotic plant materials are to be removed, or fire fuels to be reduced in accordance with an approved plan.
- 2420 MAINTAINANCE RESPONSIBILITY: It shall be the owner's responsibility to maintain control of the entire construction operations and to keep the entire site in compliance with the soil erosion control plan. Owner / contractor shall be responsible for monitoring erosion and sediment control measures prior, during and after storm events. Monitoring shall remain on file. Documenting on-site inspections, problems encountered, corrective actions, and notes and a red-line map of remedial implementation measures.
- 2421 HAULING OF MATERIALS: Reasonable care shall be taken hauling and earth, sand, gravel, stone, debris or any hazardous substances over public street, alley or other public street. Sheet dry blow, spit or track over and open roads prior to completion of haul operation. Immediate clean-up shall occur. Construction entrances shall be installed prior to commencement of grading. All construction traffic entering onto the paved roads must cross the stabilized construction entrance way.
- 2422 SANITARY FACILITIES: Shall be maintained on-site as appropriate.
- 2423 EROSION PREVENTION: During the rainy season, all paved areas shall be kept clear of earth material and debris. All earth stockpiles over 2.0 CYDs shall be covered by a tarp and ringed with straw poles or silt fencing. This shall be done as soon as possible to prevent sediment-laden runoff to any storm drainage system including existing drainage swales and watercourses.
- 2424 POLLUTION ABATEMENT: Construction operations shall be carried out in such a manner that erosion and water pollution will be minimized. State and local laws concerning pollution abatement shall be complied with.
- 2425 RAINY SEASON RESTRICTIONS: The facilities shown on the plan and depicted in section 1000 and section 1100 during the rainy season. November 1st to April 15 of any year. Grading operations during the rainy season which leave denuded slopes shall be covered with erosion control measures immediately following grading on the slopes. This will include use of straw mulch and tackifier, and erosion control blankets.
- 2426 HILTBURGATION: This plan covers only the first winter following grading with assumed site conditions as shown on the detailed erosion control plan. Prior to September 15, the completion of site improvement shall be evaluated and revisions made to this plan as necessary with the approval of the city. Plans are to be resubmitted for approval prior to August 15 of each subsequent year until site improvements are accepted by the city.

DRAWINGS BY: SO
DATE: 12/11/2018
REVISIONS:
JOB NO.
C1 . 1
SHEET 2 OF 8



GRADING AND DRAINAGE PLAN
N1 RESIDENCE
1221 LOMITA LANE, CARPINTERIA CA. 93013
A.P.N. 001-190-036

SURVEY NOTES	
<p>SURVEY NOTES:</p> <p>BOUNDARY & BASIS OF BEARINGS, SHOWN PER PARCEL MAP BOOK 11, PAGE 58 AS FILLED IN THE OFFICE OF THE COUNTY SURVEYOR.</p> <p>BENCHMARK: LOCAL BENCHMARKS SHOWN AS "CP". opus GPS OBSERVATION.</p> <p>DATUM: NAVD 88.</p> <p>WATERLINE AND PRIVATE ROAD EASEMENTS SHOWN PER PARCEL MAP. EASEMENTS PER CURRENT TITLE WORK NOT SHOWN.</p>	

STORM WATER MANAGEMENT STUDY

THE FOLLOWING INFORMATION IS BASED ON COUNTY STORM WATER BMP GUIDANCE MANUAL & GRADING PLAN BY MIKE GONES, DATED MARCH, 2018.

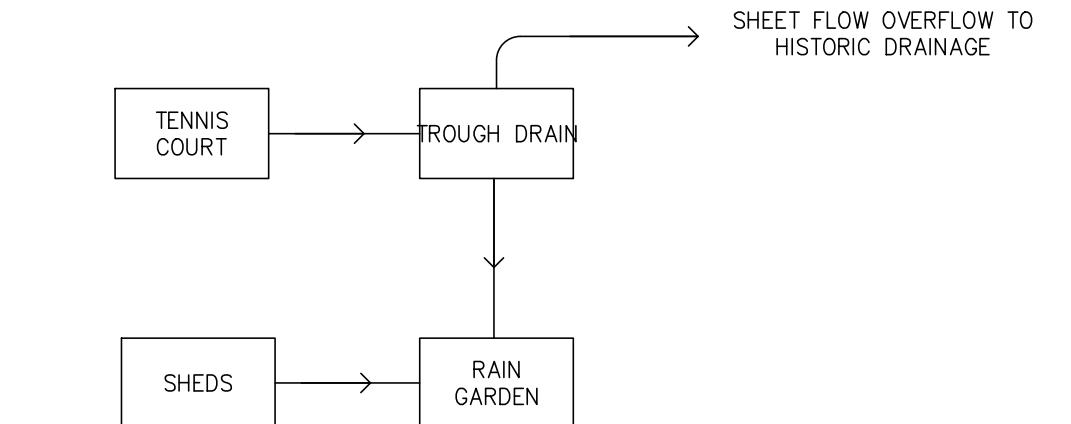
1. PROJECT IS IN CARPINTERIA (UNINCORPORATED).
2. SITE ASSESSMENT
 - A. HILLSIDE
 - B. CARPINTERIA WATERSHED
 - C. TYPE D SOIL
 - D. SITE SLOPES SOUTHWEST 5-10%
 - E. NO GROUND WATER ANTICIPATED
 - F. NO FLOOD HAZARD
- I. POLLUTANTS OF CONCERN:
 - TRASH - NOT AN ISSUE, RESIDENTIAL
 - NUTRIENTS - TO BE TREATED BY STORM WATER BMP
 - BACTERIA - NOT AN ISSUE, RESIDENTIAL
 - SEDIMENT - NOT AN ISSUE OTHER THAN FROM DURING CONSTRUCTION (EROSION CONTROL PLAN WILL BE PREPARED)
 - HYDROCARBON - TO BE TREATED BY STORM WATER BMP
 - METAL - NOT APPLICABLE, RESIDENTIAL
 - PESTICIDE - NOT APPLICABLE
3. SOILS REPORT, PRELIMINARY GEOTECHNICAL INVESTIGATION BY PACIFIC MATERIALS DATED 11/17/17.
4. SITE DESIGN BMP OPTIONS:
 - (E) RUNOFF PATTERNS TO BE HONORED. RESPECT (E) CONTOURS, TREES.
5. BASIC BMP'S - TIER 1, RAIN GARDEN (BIORETENTION).
6. AREA STUDY

A. IMPERVIOUS AREAS (SQ. FT.)/AC.	(E)	PROPOSED	CHANGE
1. ROOF AREA	2910	3310	+400
2. PATIO/WALKWAY	362	1232	+870
3. TENNIS COURT	0	7290	+7290
4. DRIVEWAY	1640	2498	+858
5. SUB-TOTAL	4912	14330	+9418
B. PEROVIOUS (SQ. FT.)	(E)	PROPOSED	CHANGE
1. PATIO/WALK	0	0	0
2. LANDSCAPE	38646	29228	-9418
3. SUB-TOTAL	38646	29228	-9418
TOTAL A5 + B3	43558	43558	0

SUMMARY: (N) IMPERVIOUS AREA = 9418 S.F.
REPLACED IMPERVIOUS AREA = 936 S.F.
(E) IMP. AREA TO REMAIN = 3976 S.F.
(N) + REPLACED IMPERVIOUS AREA = 9418 S.F. + 936 S.F. = 10354 S.F.

(N) + REPLACED IMPERVIOUS AREA = 10354 S.F. <15,000 S.F., THEREFORE, PROJECT IS TIER 1. SEE STORM WATER CONTROL PLAN FOR MORE INFORMATION AND BMP SIZING CALCS.

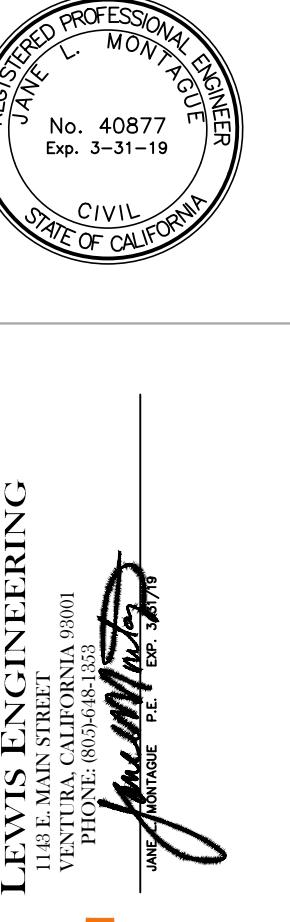
7. SCHEMATIC



DRAWINGS BY: SO
DATE: 12/11/2018
REVISIONS:

JOB NO.: C1.2
SHEET 3 OF 8





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GRADING AND DRAINAGE PLAN
NI RESIDENCE
A.P.N. 001-190-036
1221 LOMITA LANE, CARPINTERIA CA. 93013

DRAWINGS BY: SO
DATE: 12/11/2018
REVISIONS:

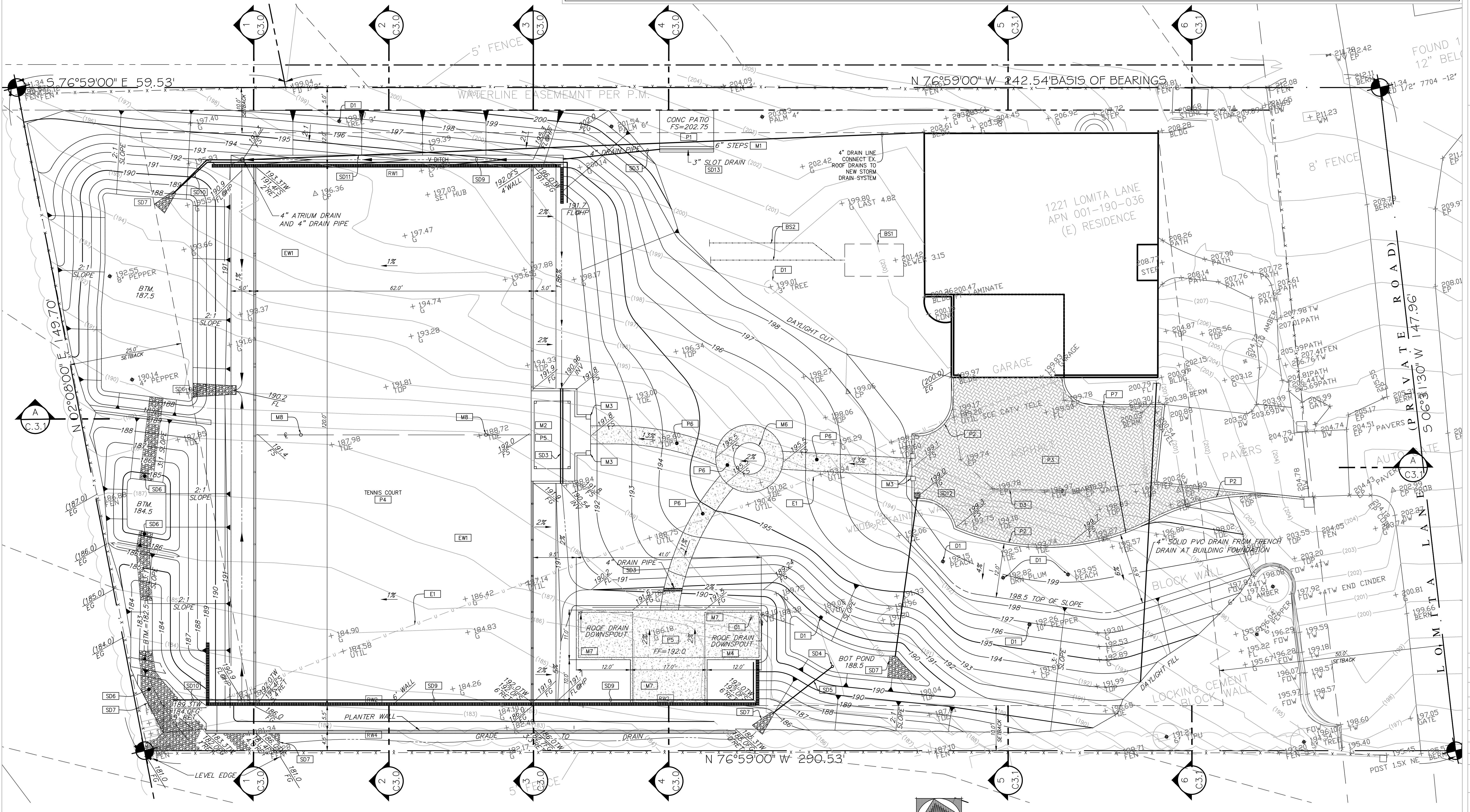
JOB NO.

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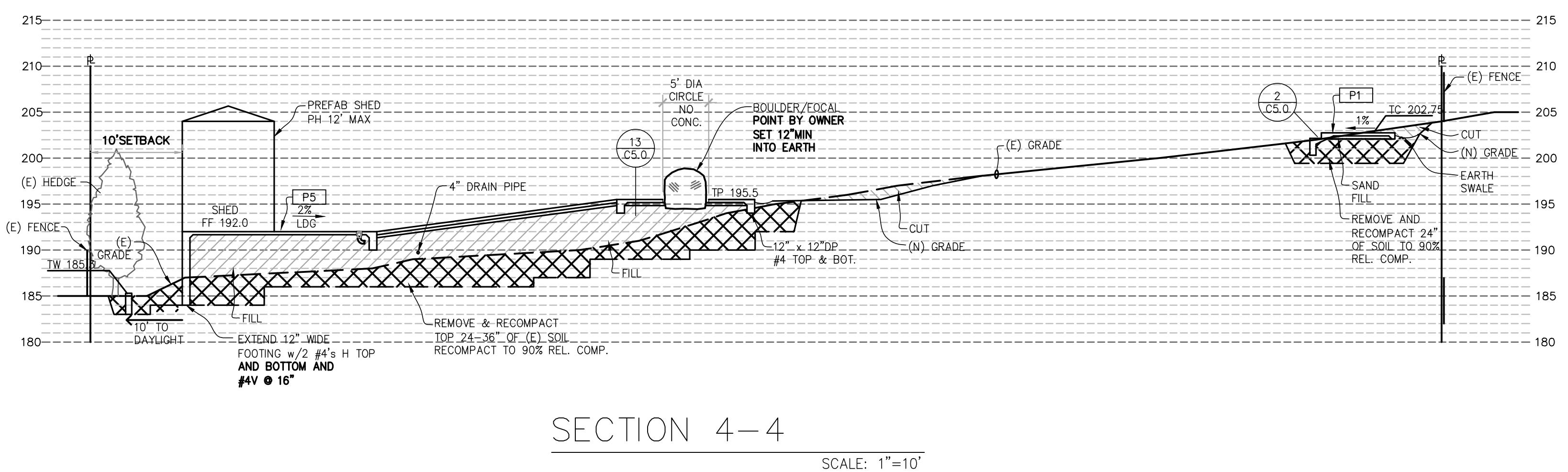
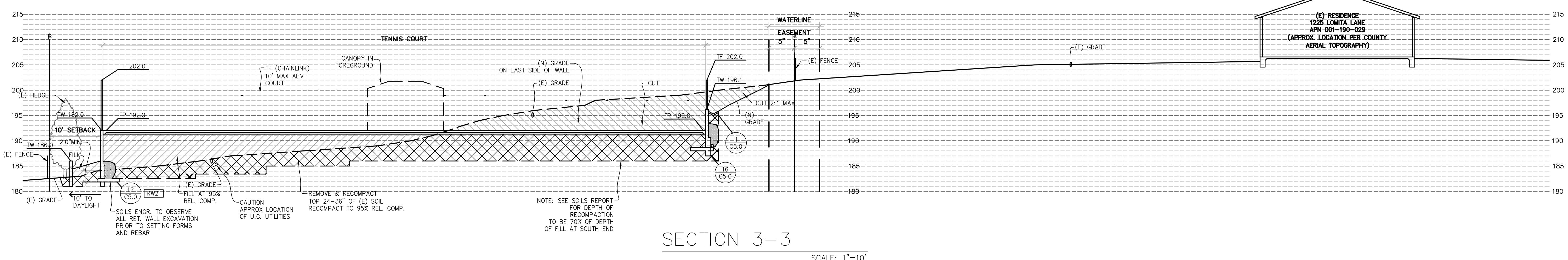
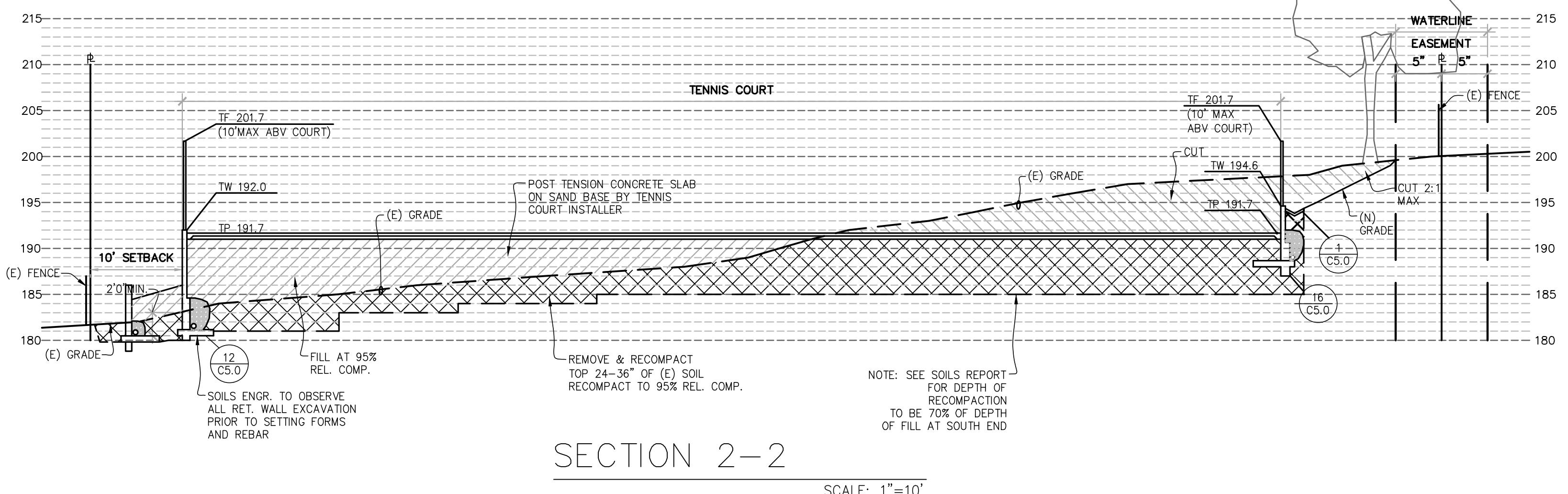
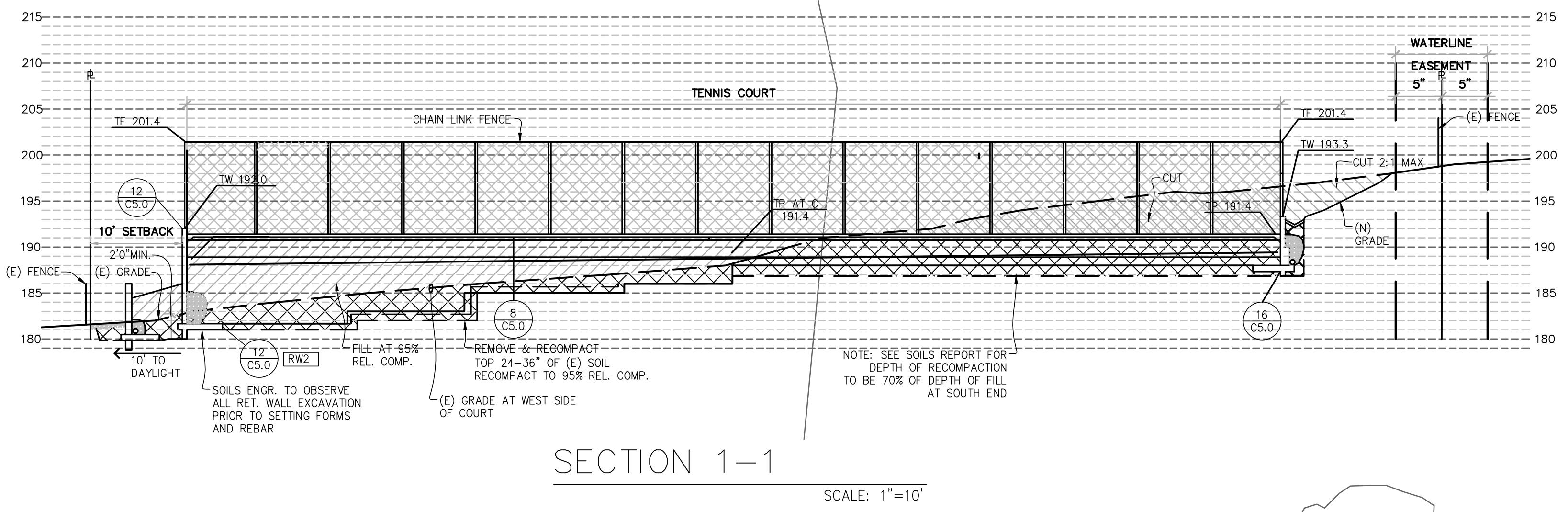
SHEET 4 OF 8

CONSTRUCTION NOTES

- BS1 APPROX LOCATION OF (E) SEPTIC TANK.
BS2 APPROX LOCATION OF (E) LEACH LINES DO NOT DISTURB.
D1 REMOVE TREE & ROOT (OWNER MAY WISH TO RELOCATE).
D2 REMOVE FENCE & ROOT (OWNER MAY WISH TO RELOCATE).
D3 REMOVE WOOD RET. WALL.
E1 (E) DIRECT BURIAL ELECT., CABLE TV AND TELEPHONE.
TO BE PLACED IN CONDUIT AND REPLACED AS REQ'D
FOR SOIL RECOMPACT. ASSUME 3" COVER ON ELECTRIC
LINE & 24" COVER FOR CATV & TEL. SEE DET. 7/C.5.
EW1 FOR TENNIS COURT SPECIAL RECOMPACT REQUIREMENTS
SEE SOILS REPORT GRADING RECOMMENDATION #4
(SEE SHEET C1.0 SPEC. 2255, GRADING ITEM #4)
M1 CONSTRUCT STAIR PER DET. 2/C.50.
M2 INSTALL PREFAB 8'x15' CANOPY (ROOF AREA 120 SF)
M3 CONSTRUCT 12' SQ. CMU x 3' H COLUMN.
- M4 ADD GUTTER AND DOWNSPOUT TO PREFAB SHED. EXTEND
4" RAIN WATER LINE TO RAIN GARDEN.
M5 6" DIA. PIPES PER 25'-0".
M6 PROVIDE 7'DIA. CIRC. PLANTER/FOCAL POINT
INSTALL PREFAB SHEDS SELECTED BY OWNER. MAX
ROOF AREA 120 SF EACH.
M8 TENNIS NET POST & ANCHOR PER TENNIS COURT CONTRACTOR.
- P1 INSTALL CONC. VIEW TERRACE PER DET. 13/C.5.0 8'Wx12'L
P2 INSTALL CURB/PAVER RESTRAINT PER DET. 39/C.50
P3 INSTALL INTERLOCKING PRECAST CONCRETE PAVERS
(NON PERMEABLE) PER DET. 3/C.50
P4 TENNIS COURT SURFACING. BY OTHERS ASSUME 6" POST
TENSIONED CONCRETE SLAB OVER SAND BASE ON
RECOMPACT.
P5 CONSTRUCT 4" CONC. SLAB w/ 4" x 4" OCEW
OVER 12" YELLOW SAND ON CERTIFIED COMPACTED FILL
- P6 CONSTRUCT 4" WIDE 4" CONC. SIDEWALK/RAMP w/ 3's @ 24" OCEW.
NOTE: OWNER HAS ELECTED TO HAVE RAMPS INSTALLED TO
AVOID STEPS. PROVIDE 2% CROSS SLOPE.
P7 INSTALL PAVER FLUSH CURB RESTRAINT PER DET. 3C/C.50
- SD6 CONSTRUCT ROCK CHANNEL PER TAPER FROM
3'WIDE AT HIGH POINT TO 4' AT OUTLET
PER DET. 1/C.50.
SD7 6" DIA. ENDLESS DISPIATOR PER DET. 19/C.5.0.
SD8 CONNECT TRough DRAIN TO DE.
SD9 INSTALL 6" TD @ 1% MIN. TO OUTLET.
SD10 OUTLET FD THRU BASE OF WALL ABOVE GRADE.
SD11 INSTALL CONC. V. DITCH PER RET. WALL
PER DET. 1/C.50.
SD12 INSTALL DRAINLET IN PAVEMENT PER DET. 14/C.50.
SD13 3" DIA. 1" SLOP DRAIN
SD14 INSTALL BRAIN-INLET PER DET. 15/65.0 W=6".
SD15 INSTALL BRAIN-INLET PER DET. 15/65.0 W=8" W=4" DRAIN
LINE OUTLET THRU WALL.



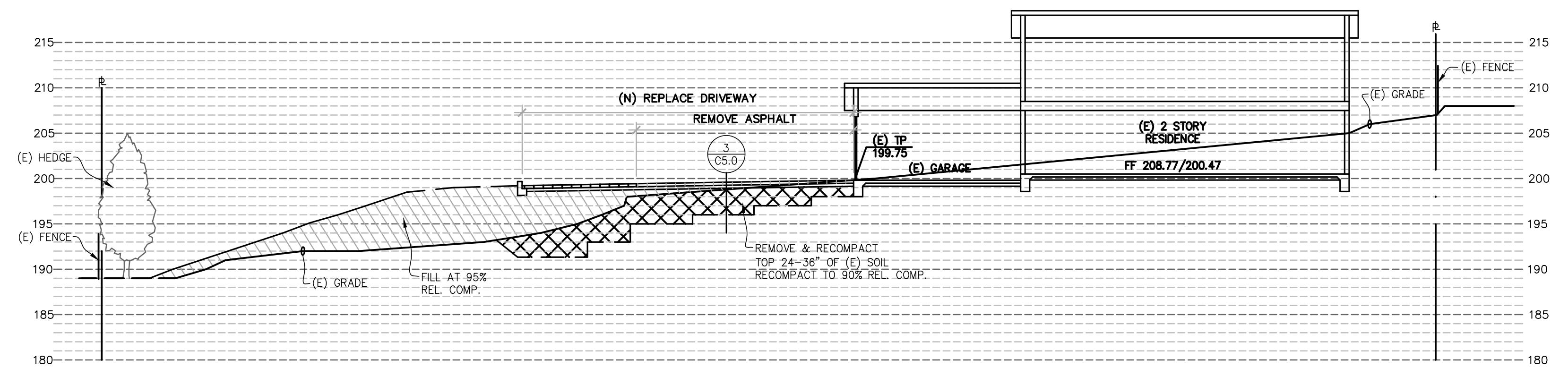
GRADING, DRAINAGE, UTILITIES PLAN



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SHEET 5 OF 8

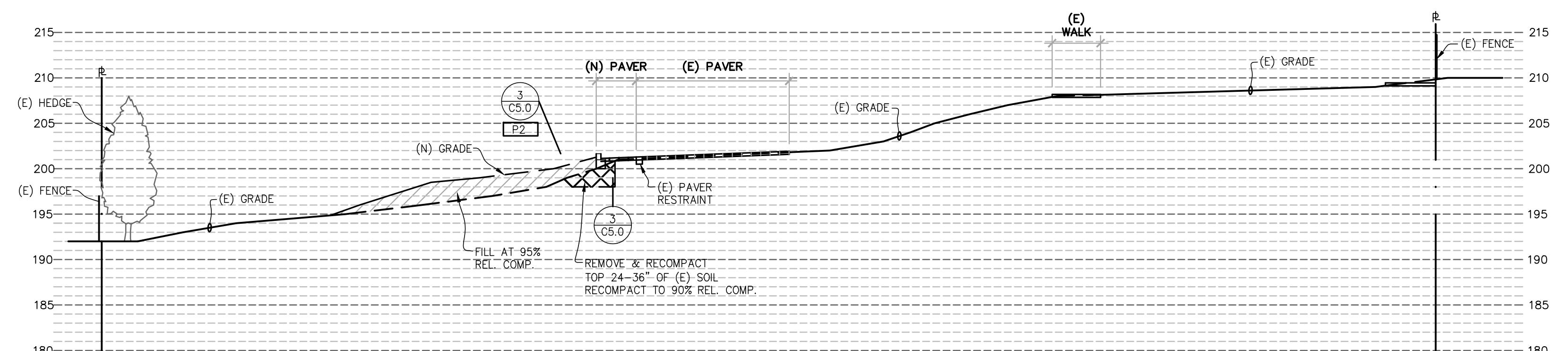


A.P.N. 001-190-036
1221 LOMITA LANE, CARPINTERIA CA. 93013



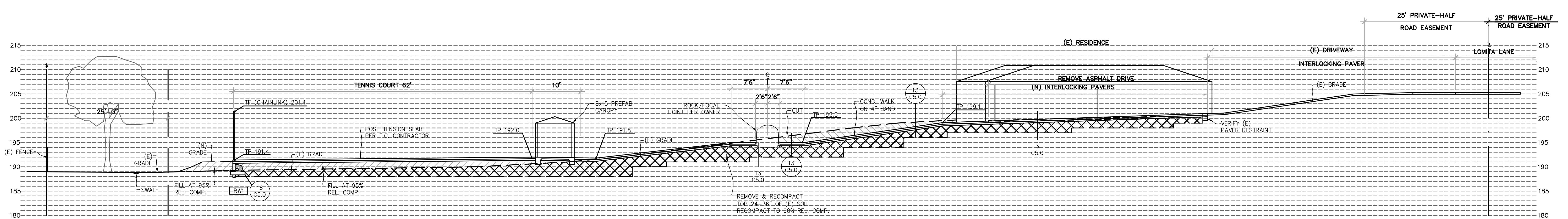
SECTION 5–5

SCALE: 1"=10'



SECTION 6–6

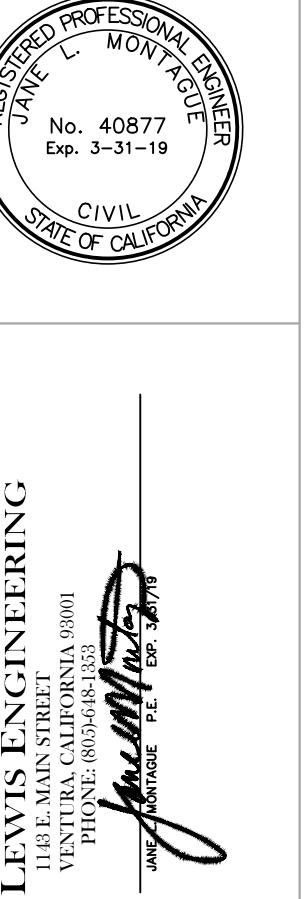
SCALE: 1"=10'



SECTION A-A

SCALE: 1"=10'

33.1



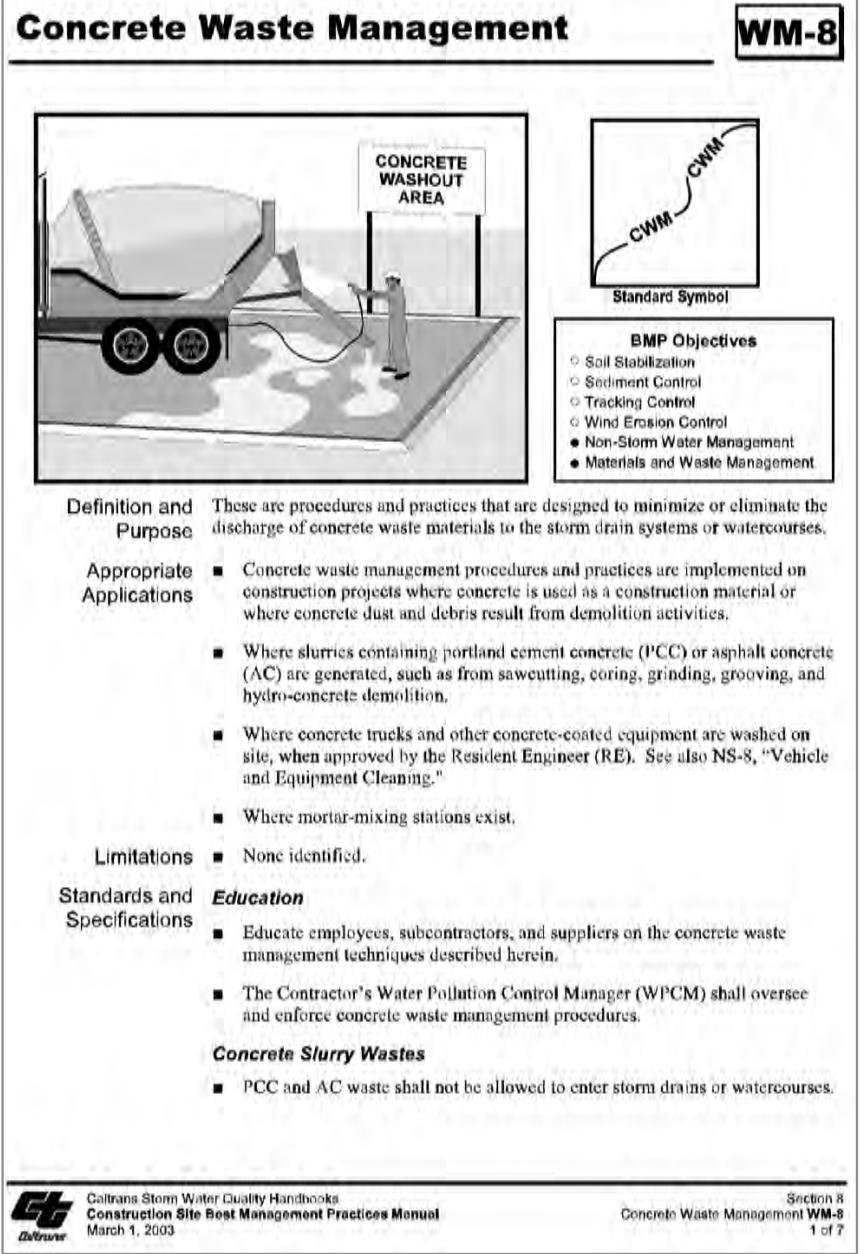
GRADING AND DRAINAGE PLAN
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SHEET 7 OF 8



BEST MANAGEMENT PRACTICES FOR CONSTRUCTION ACTIVITIES:

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 OR WIND.

STOCKPILES OF EARTH AND OTHER CONSTRUCTION RELATED MATERIALS MUST BE PROTECTED FROM BEING TRANSPORTED FROM THE SITE BY THE FORCES OF MIND OR WATER.

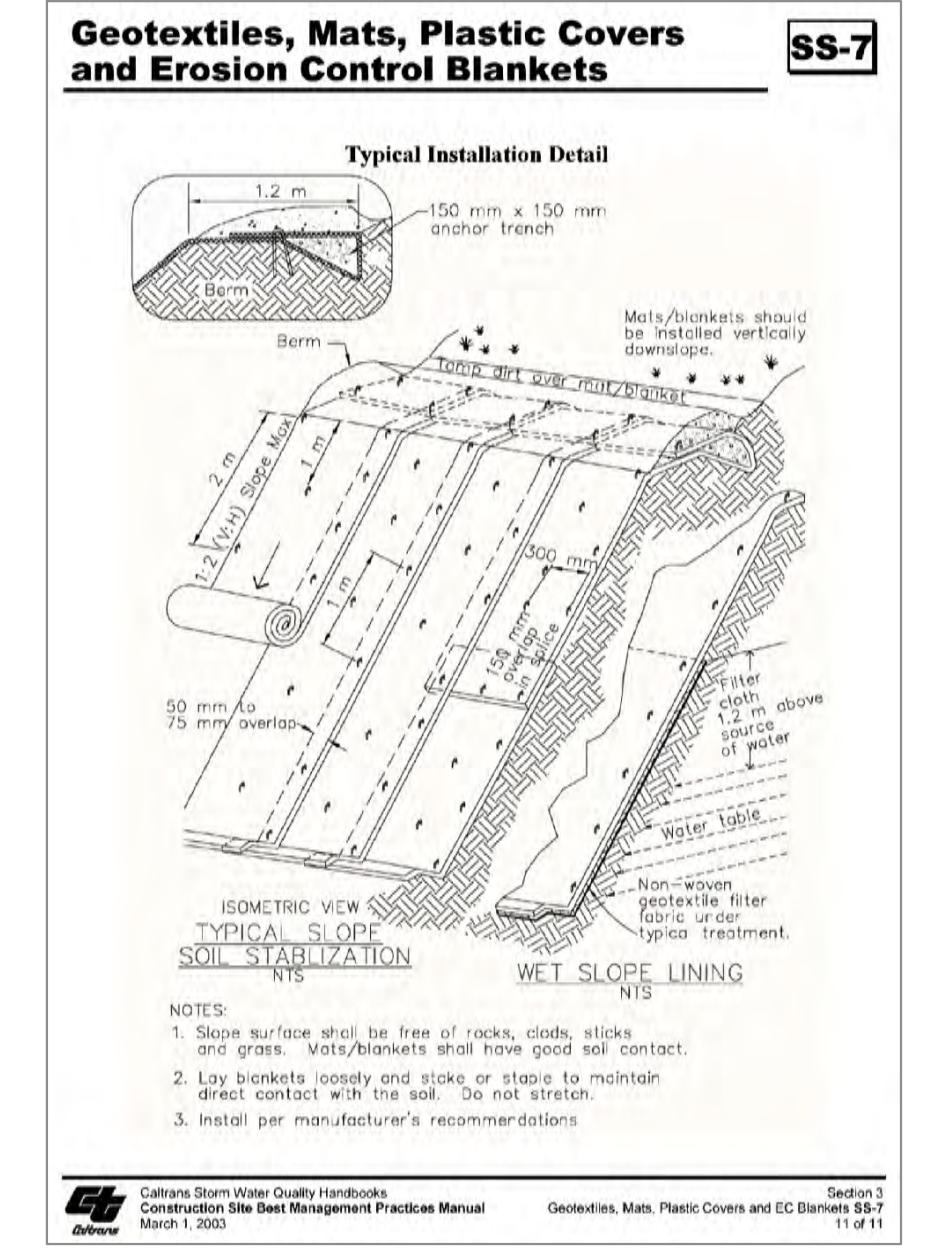
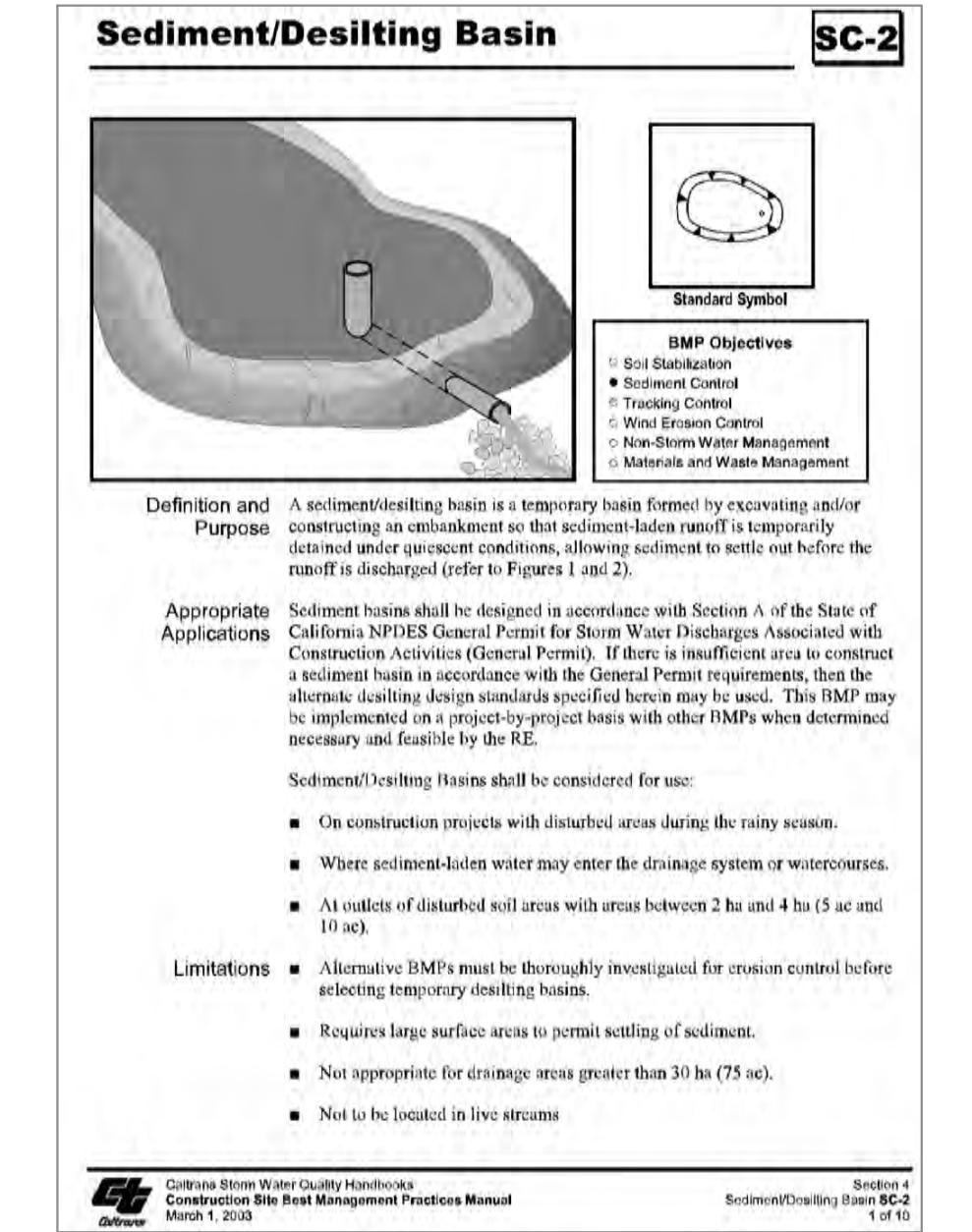
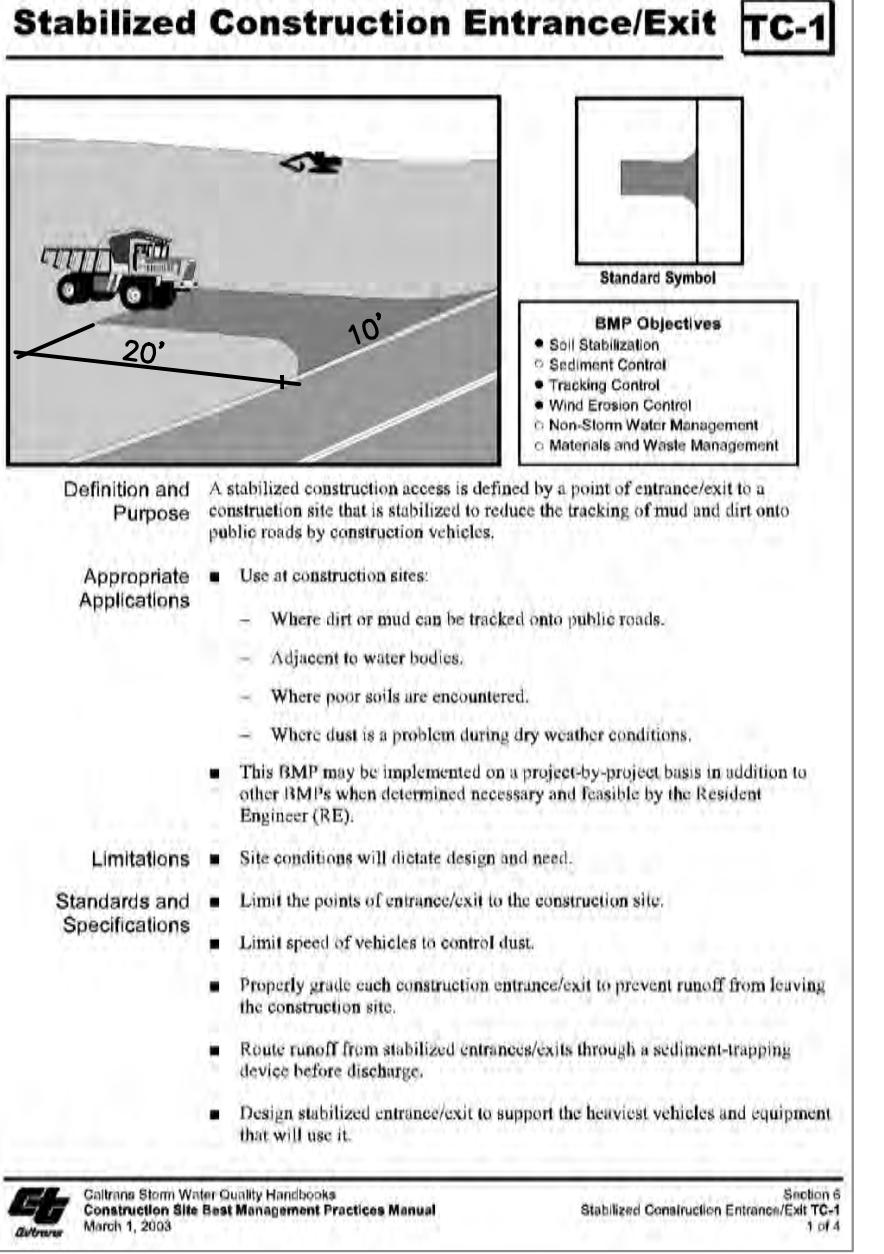
FUELS, OILS, SOLVENTS AND OTHER TOXIC MATERIALS MUST BE STORED IN ACCORDANCE WITH THEIR LISTING AND ARE NOT TO CONTAMINATE THE SOIL AND SURFACE WATERS. ALL APPROVED STORAGE CONTAINERS ARE TO BE PROTECTED FROM THE WEATHER. SPILLS MAY NOT BE WASHED INTO THE DRAINAGE SYSTEM.

EXCESS OR WASTE CONCRETE MAY NOT BE WASHED INTO THE PUBLIC WAY OR ANY OTHER DRAINAGE SYSTEM. PROVISIONS MUST BE MADE TO RETAIN CONCRETE WASTES ON SITE UNTIL THEY CAN BE DISPOSED OF AS A SOLID WASTE.

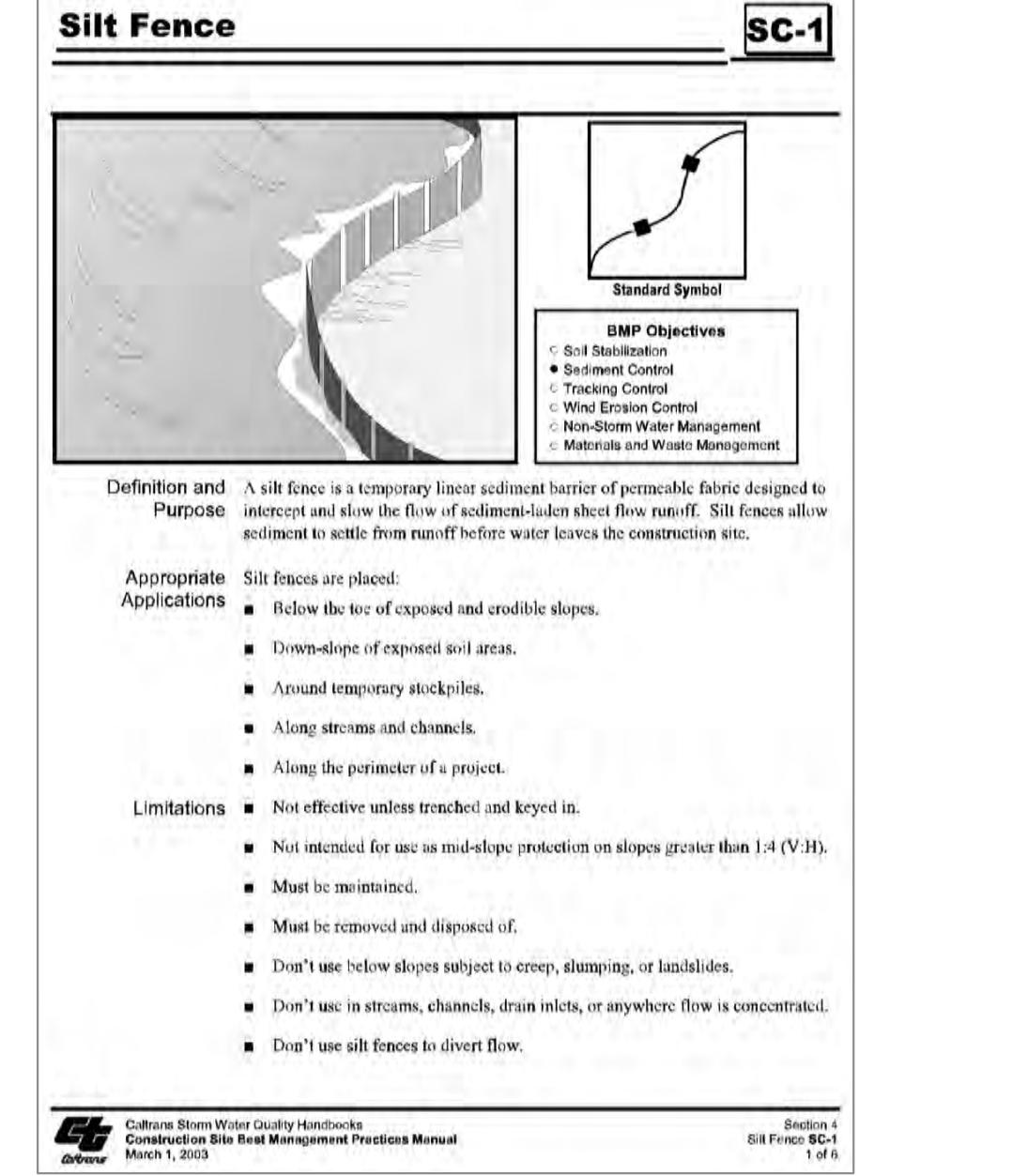
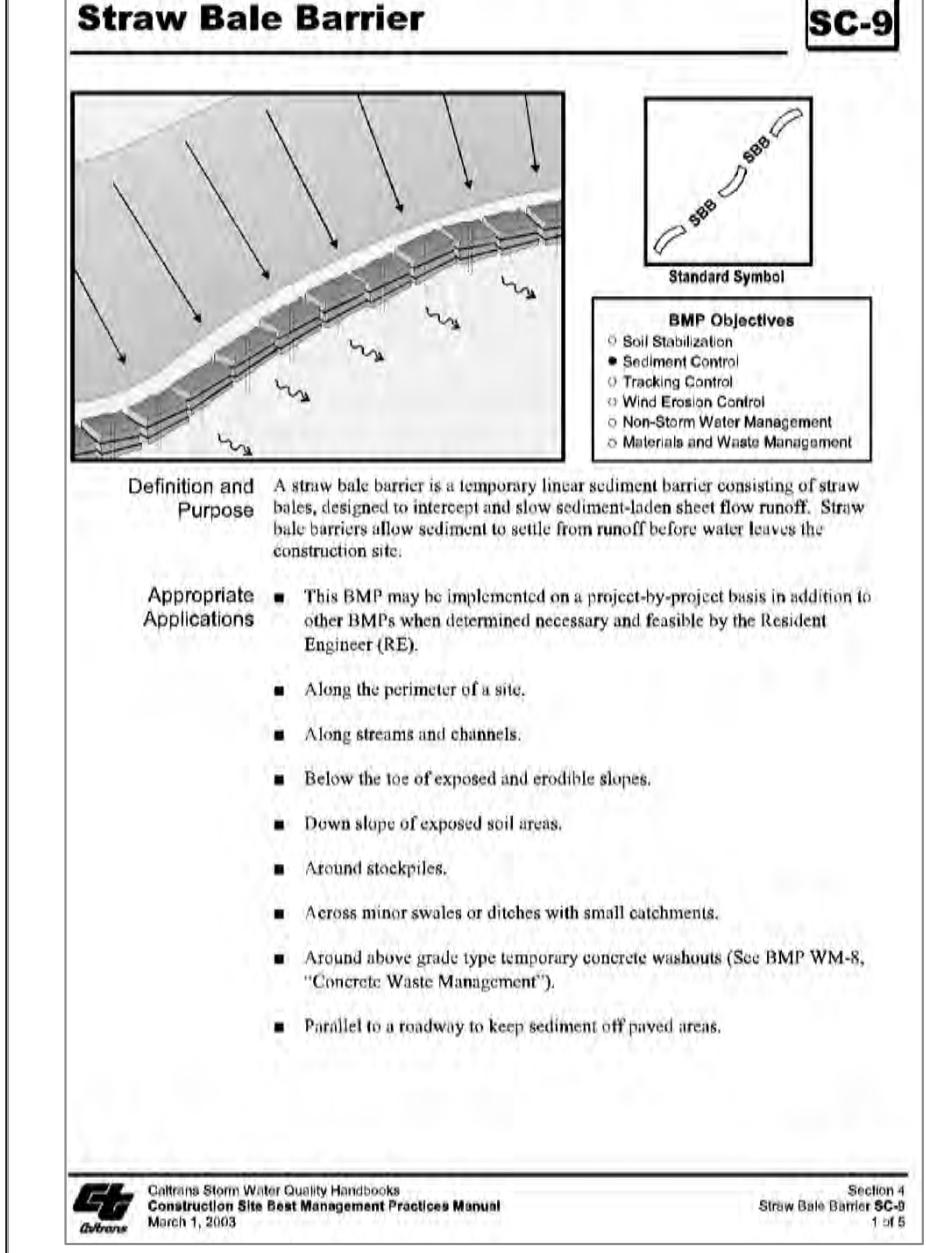
TRASH AND CONSTRUCTION RELATED SOLID WASTES MUST BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION OF RAINWATER AND DISPERSAL BY WIND.

SEDIMENTS AND OTHER MATERIAL MAY NOT BE TRACED FROM THE SITE BY VEHICLE TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS MUST BE STABILIZED SO AS TO INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC WAY. ACCIDENTAL DEPOSITIONS MUST BE SWEEP UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS.

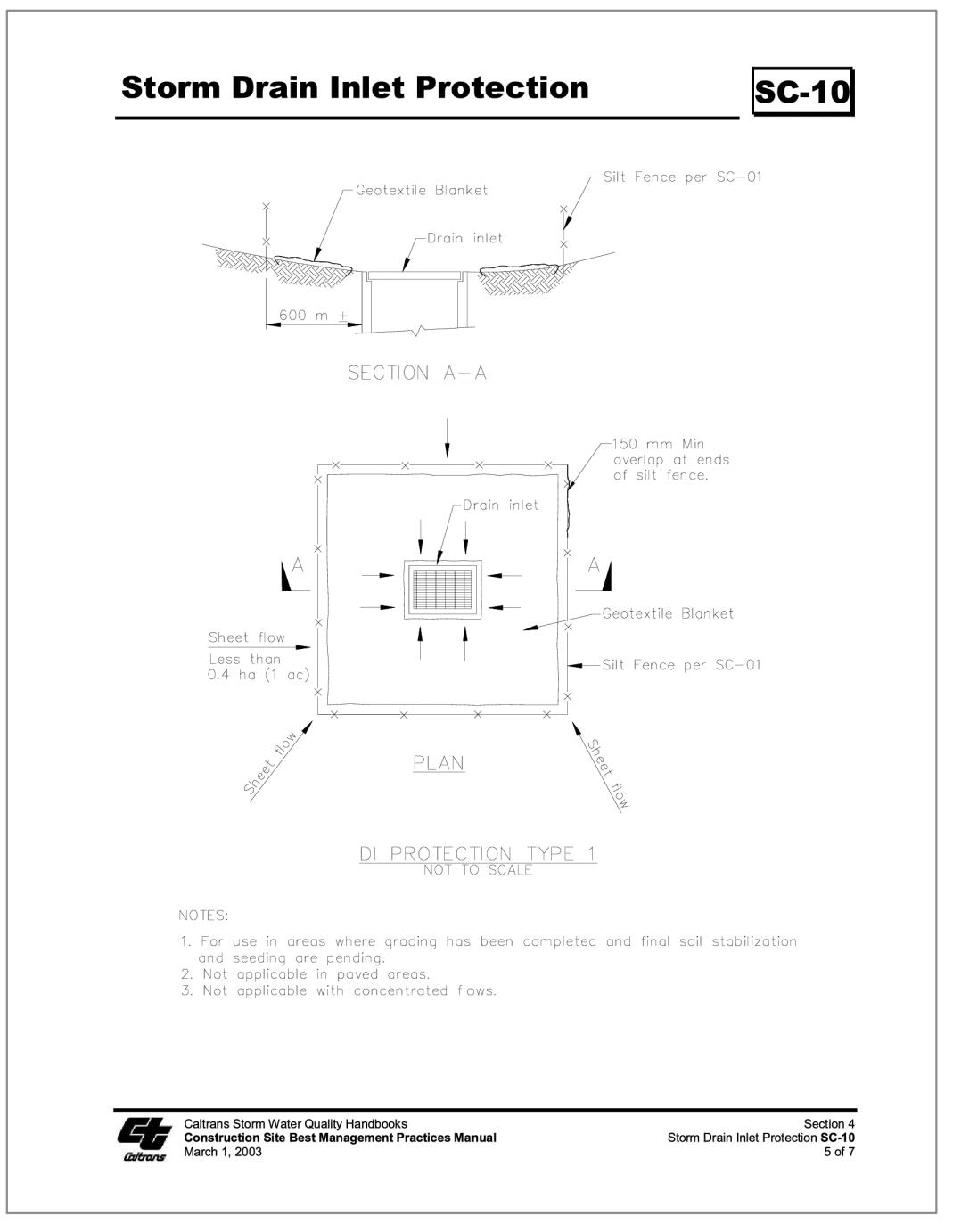
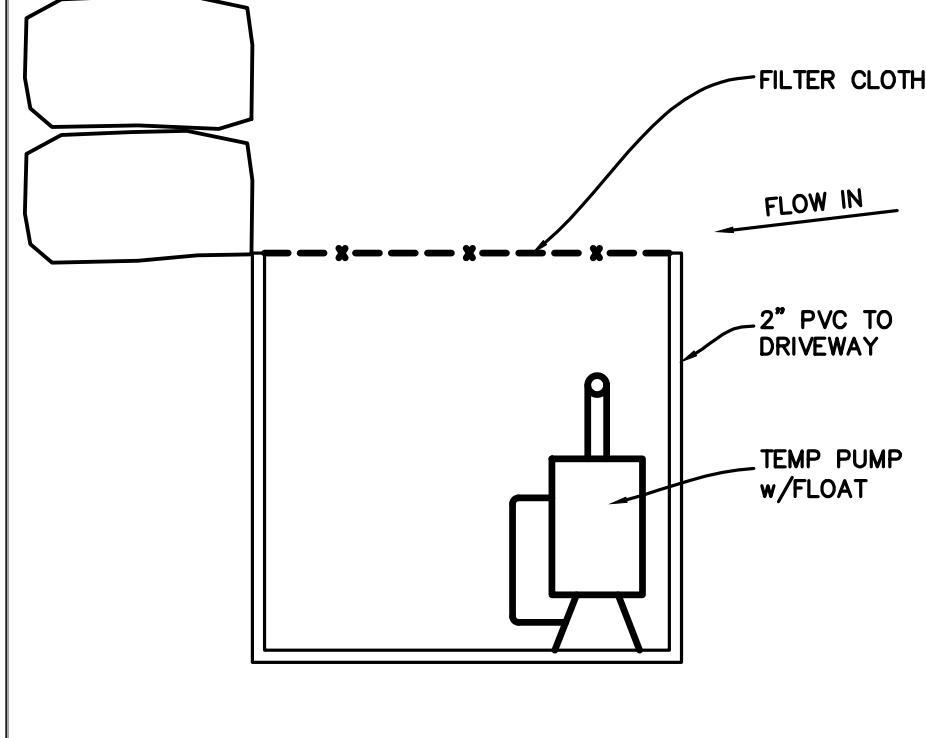
ANY SLOPES WITH DISTURBED SOILS OR DEMANDED OF VEGETATION MUST BE STABILIZED SO AS TO INHIBIT EROSION BY WIND AND WATER.



4 CONCRETE WASHOUT AREA N.T.S. 1 | 5 BEST MANAGEMENT PRACTICES

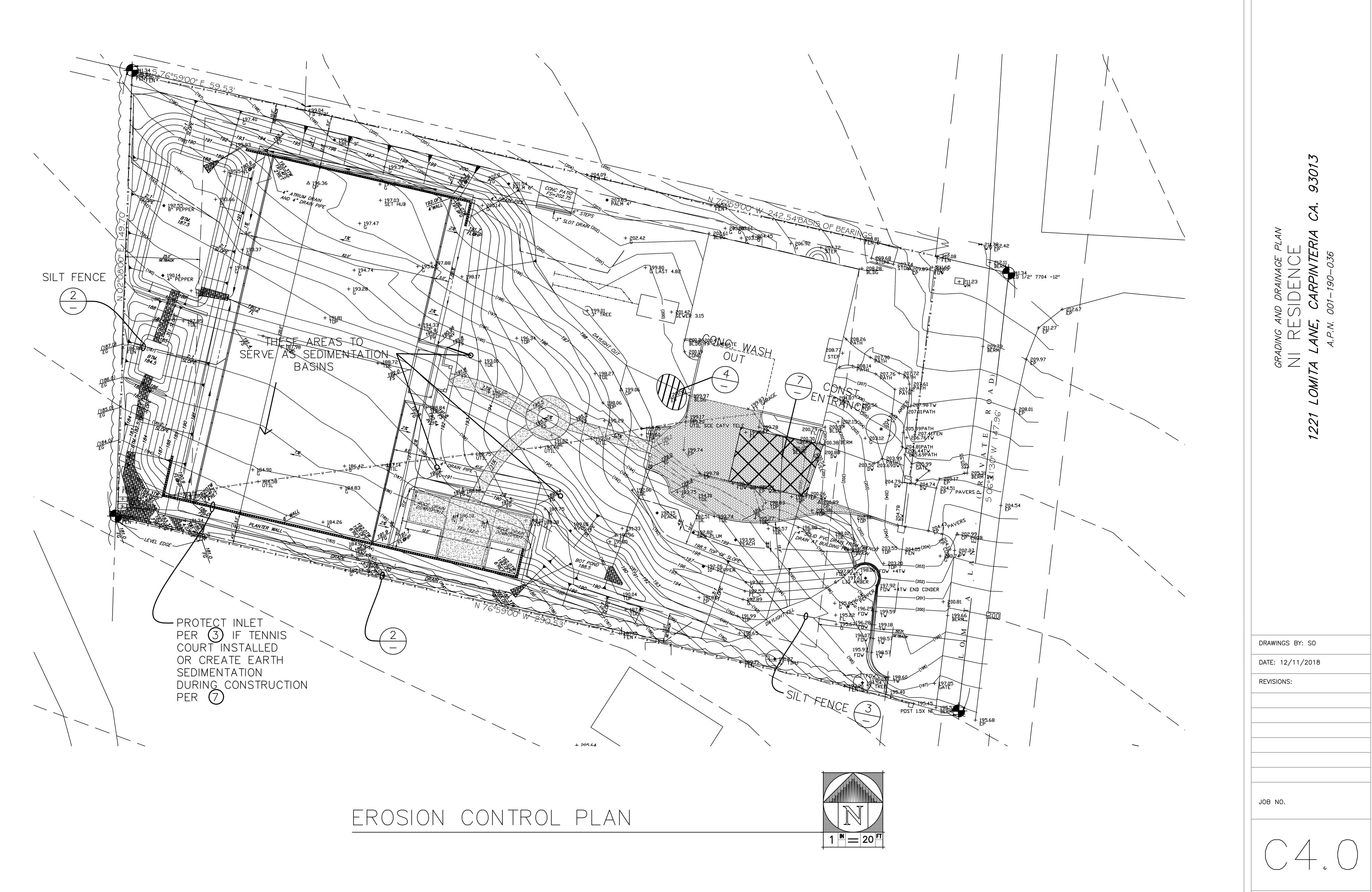


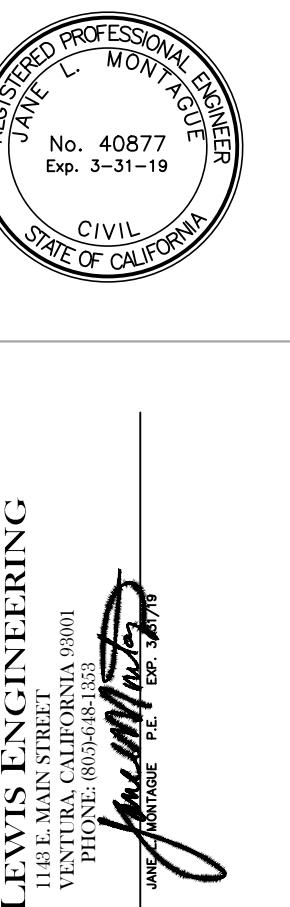
5 STRAW BALES N.T.S. 2 | 6 SILT FENCE N.T.S.



6 DRAIN INLET w/PUMP N.T.S. 3 | 7 INLET PROTECTION N.T.S.

7 CONSTRUCTION ENTRANCE N.T.S. 8 | 8 SEDIMENTATION BASIN N.T.S. 9 | 9 HILLSIDE RESTORATION N.T.S.





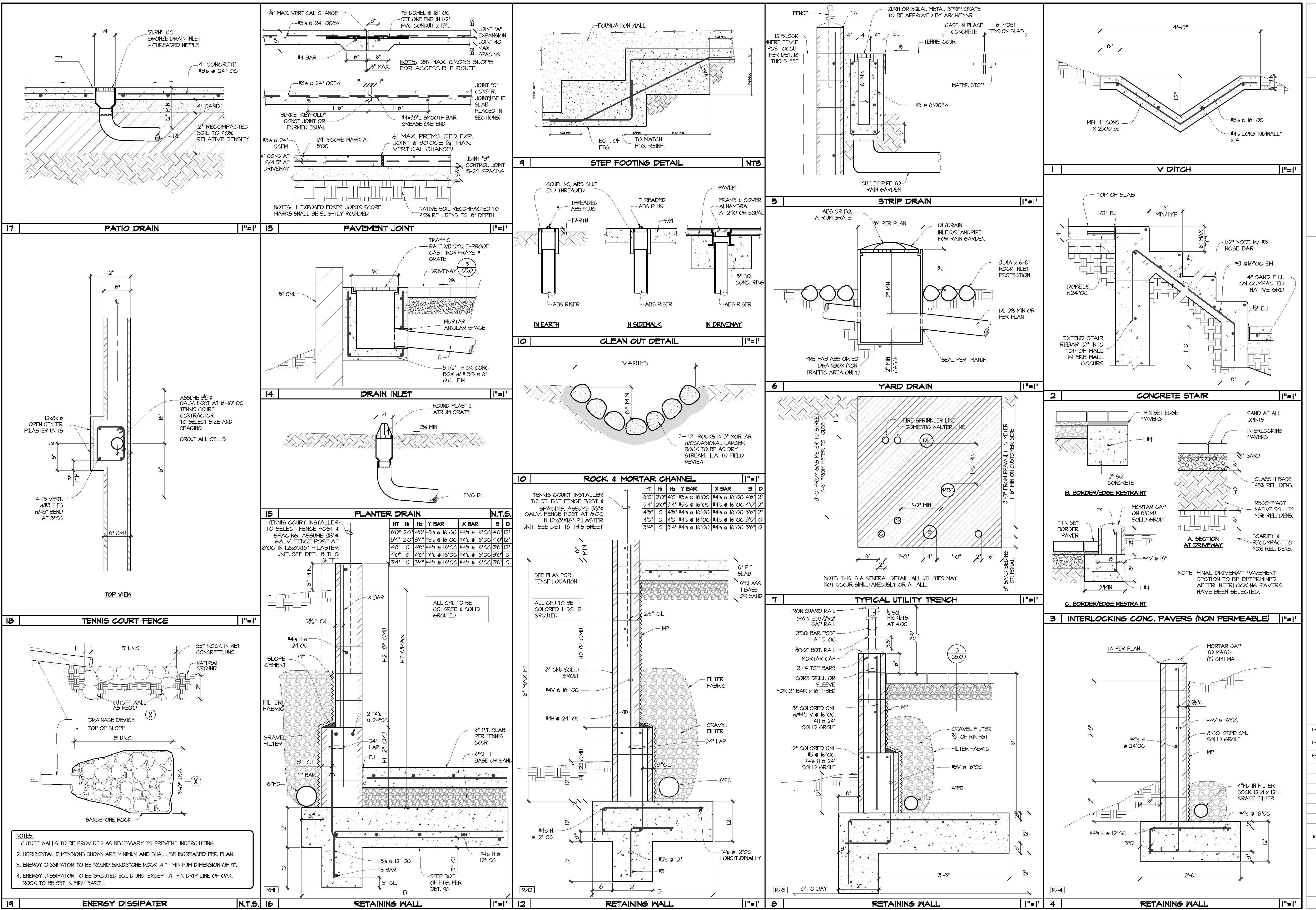
GRADING AND DRAINAGE PLAN
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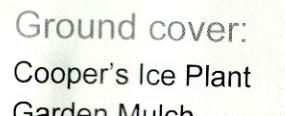
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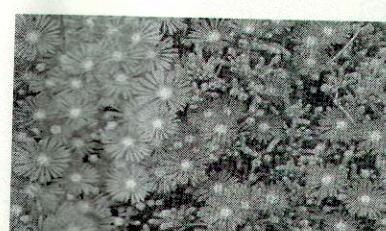
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SHEET 8 OF 8





Ground cover:
Cooper's Ice Plant
Garden Mulch



New trees:
7 Dwarf citrus trees.



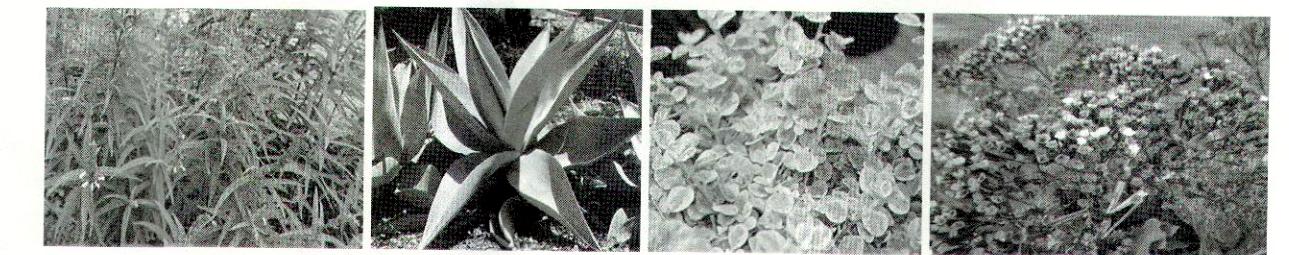
Existing trees:

3 Peach trees ,1 Apricot tree, 8 Citrus trees, 3 Macadamia nut trees, 1 Pomegranate tree
4 Persimmon trees, 2 Avocado trees,1 Mulberry tree, 15 Ornamental trees.



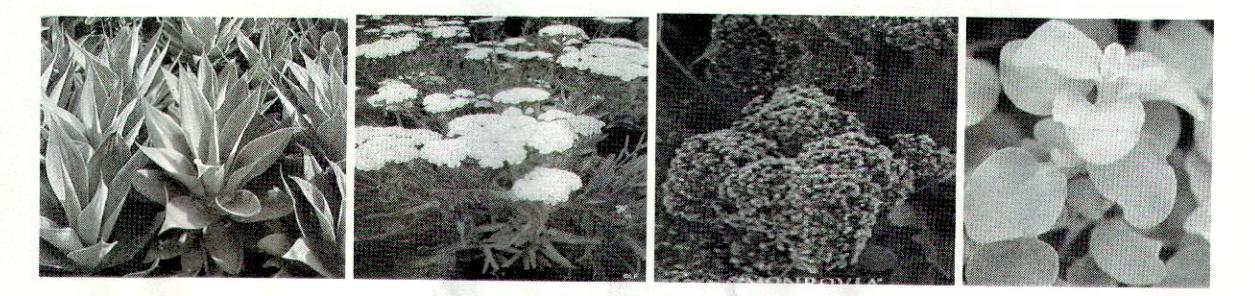
Purple Rain Garden #1

Kangaroo paw, Blue Agave, Purple heart.

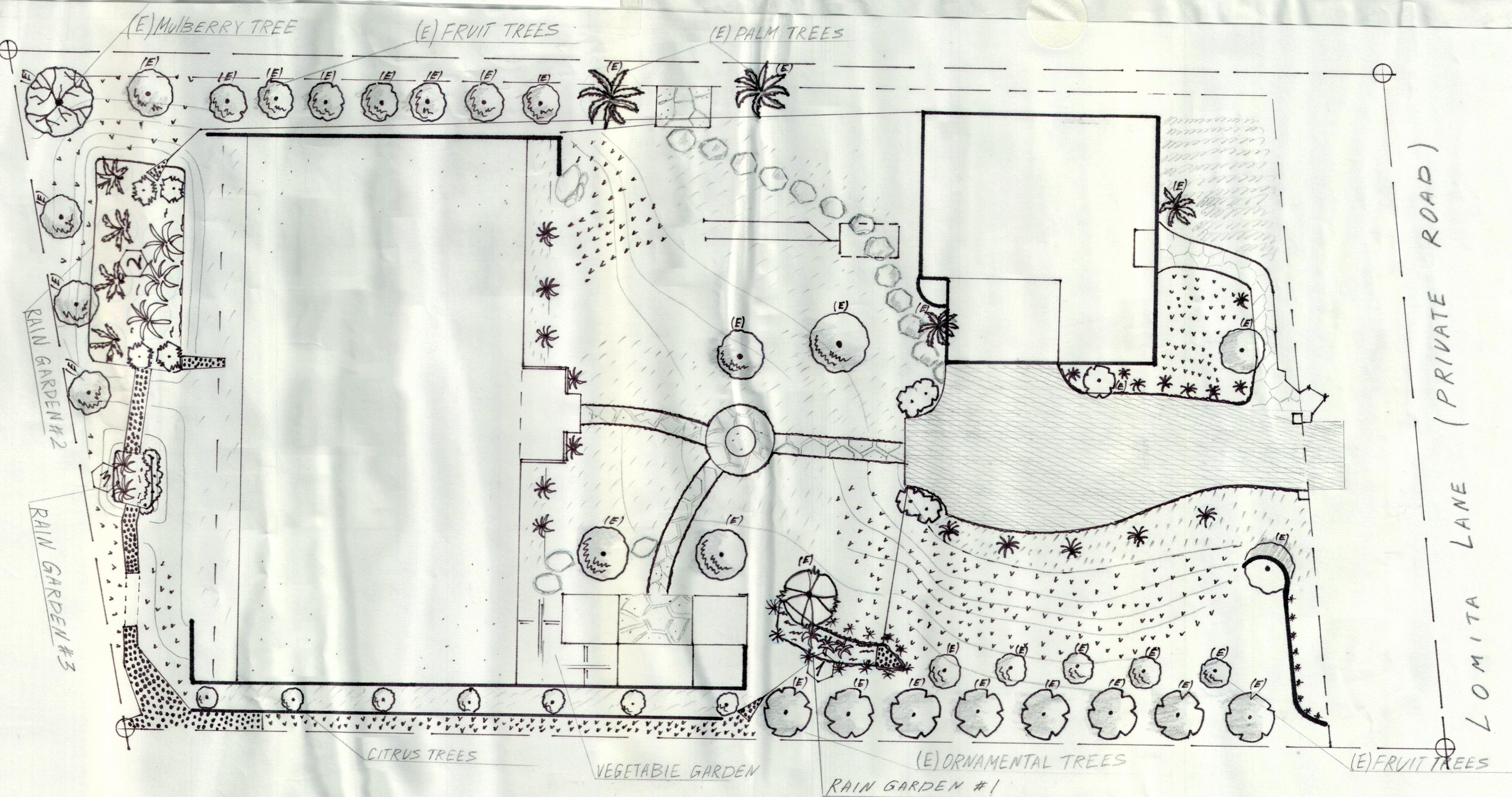


Mexican Bush Sage, Fox Tail Agave, Licorice Plant, Sea Lavender.

Small Rain Garden #3



Fox Tail Agave, Yarrow Moonshine, Sea Lavender, Licorice Plant.



SUSTAINABLE LANDSCAPING
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