

Long Form - Stormwater Data Report



Dist-County-Route: 04-SF-101/1

Post Mile Limits:

101: PM 9.0/9.8; 1: PM 6.8/7.1

Project Type: Structure Replacement

EA: 04-163731

RU: 04-242

Program Identification: HE-12

Phase: PID PA/ED PS&E

Regional Water Quality Control Board(s): San Francisco Bay -- Region 2

Is the project required to consider incorporating Treatment BMPs? Yes No

If yes, can Treatment BMPs be incorporated into the project? Yes No

If No, a Technical Data Report must be submitted to the RWQCB at least 60 days prior to PS&E Submittal. List submittal date: _____

Total Disturbed Soil Area: Approximately 5 acres

Estimated Construction Start Date: 10/09/2009 Construction Completion Date: 02/10/2011

Notification of Construction (NOC) Date to be submitted: 09/09/2009

Notification of ADL reuse (if Yes, provide date) Yes Date: determination pending No

Separate Dewatering Permit (if Yes, permit number) Yes Permit #: _____ No

This Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the data upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E.

H. Khodabakhsh 6/03/09
Hossein Khodabakhsh, Registered Project Engineer/Landscape Architect Date

I have reviewed the storm water quality design issues and find this report to be complete, current, and accurate:

Keyhan Moghbel 6/3/09
Keyhan Moghbel, Project Manager Date

Robert W. Braga 6/3/09
Robert Braga, Designated Maintenance Representative Date

Alex McDonald 06/03/09
David Yam, Designated Landscape Architect Representative Date

Brian J. Rowley 06/03/09
Brian J. Rowley, District/Regional SW Coordinator or Designee Date



STORMWATER DATA INFORMATION

1. Project Description

The existing Doyle Drive, United States (U.S.) Highway 101, is an elevated structure aligned from approximately, east to west, Girard Road (near the Palace of Fine Arts) to the Golden Gate Bridge approach within the Presidio National Park, in the City and County of San Francisco. This structure is at its design life, and may not be structurally safe during a future seismic event. Short-term improvements are no longer cost effective and existing structures, such as, the Marina Viaduct (Low Viaduct), Presidio Viaduct (High Viaduct) and Ruckman Undercrossing have structural sufficiency ratings below recommended levels. The proposed improvements would address structural deficiencies and bring Doyle Drive to current design and safety standards.

The proposed replacement scheme, Presidio Parkway (Parkway), will realign the existing footprint of the traveled-way. Included in this proposal are the following general elements:

- Modifications to interchanges at Girard Road and California State Route (SR) 1,
- Two elevated structures: Low Causeway and High Viaduct,
- Two cut-and-cover tunnels: Main Post and Battery Tunnels,
- Multiple at-grade roadway sections,
- Temporary detour to facilitate traffic movement during construction; this is anticipated to be in-use for 2 winter seasons.

In response to this urgency, the Parkway has been approved to receive funding from the Federal Economic Stimulus Package. In order to be eligible for these funds, an accelerated schedule has been developed. This accelerated, phased strategy plans to divide the Parkway into six (6) separate construction contracts. Due to this approach, an approximate total cost savings of \$190 million is anticipated; \$100 million of stimulus and \$90 million of savings from project acceleration and design refinements.

This report concerns the first accelerated construction contract (Contract 3), which extends from, east to west, post-mile (PM) 9.0 to PM 9.8 along U.S. Highway 101. Additionally, the contract extends south along SR 1 to PM 6.8. Contract 3 comprises both at-grade roadway and elevation structure construction. Structures include: the southbound direction of the High Viaduct, southern section of the Park Presidio Interchange (101/1 Interchange), and Ruckman Undercrossing along SR 1. The Parkway has an approximate disturbed soil and net increased impervious areas of 42 acres and 27.3 acres, respectively. Within Contract 3, these areas are approximately 5 and 8, respectively.

2. Define Site Data and Storm Water Quality Design Issues (refer to Checklists SW-1, SW-2, and SW-3)

The Presidio is situated within the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (Region 2). Specifically, the Parkway is located within Hydrologic Sub-Area (HSA) 203.40, as part of the larger San Francisco Bayside Hydrologic Area. Within this HSA, the direct downstream receiving water body is the San Francisco Bay-Central, which is also included as part of the Federal Clean Water Act (CWA) "Section 303(d) List of Water Quality Limited Segments. Each Regional Water Quality Control Board (RWQCB) furnishes a list of water bodies, within its jurisdiction, that have beneficial uses, already impacted by a pollutant of concern. To help assuage the detrimental effects of these pollutants, the respective RWQCB promulgates Total Maximum Daily Loads (TMDLs), or

thresholds, of pollutant concentrations that must not be exceeded. The San Francisco Bay-Central is listed for the following pollutants/stressors of concern: chlordane, DDT, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, polychlorinated biphenyls (PCBs), PCBs (dioxin-like), and selenium. Of these, only mercury has been approved as TMDL; PCBs are awaiting concurrence by the U.S. Environmental Protection Agency (EPA).

The overall drainage system within Presidio property is divided into separate stormwater and sanitary pipe networks. The sanitary network in proximity to the Parkway is metered to the City of San Francisco combined sewer system, and is ultimately treated at the Southeast Water Pollution Control Plant. Conversely, the stormwater network discharges to the San Francisco Bay (Bay). During high flow events, sanitary sewer flows from the Presidio, commingled with combined sewer from the City, enter the North Shore Outfall Consolidation storage basin. Presently, stormwater flows from Doyle Drive are not treated.

The existing stormwater outfalls servicing the Presidio, in proximity to Doyle Drive, are designed to convey the 10-year storm event (Q_{10}); these are located at the eastern and western sides of the Parkway). The proposed Parkway stormwater conveyance must coincide with the Department Highway Design Manual (HDM), which requires outfall capacity to be designed for the 25-year flow (Q_{25}). Whereas this exceeds the existing capacity, the two functioning outfalls shall be replaced, although not under this contract.

According to the National Resource Conservation Service, the predominant Hydrologic Soil Group (HSG) within the limits of Contract 3 are rated "D." A HSG rating of "D" indicates that the surface, shallow depth, soils are high in clay content, and are impermeable. Only in the vicinity of the eastern terminus of Contract 3 are HSG "A" soils. A map showing these areas is attached; see "Supplemental Attachments."

Also, throughout Contract 3, approximately 90% of the soil, from original ground to 2-foot depth, is considered as hazardous for lead. For these soils, Class 1 disposal methods will be required. Other soils have been identified as contaminated for lead. Re-use of aerially deposited lead soils (other than Class I material) is yet to be determined; a decision is pending from Presidio staff.

The general land use is for Presidio National Park purposes. Many of the neighboring structures to the Parkway are low-level buildings of varying historical significance.

To comply with the Statewide National Pollutant Discharge Elimination System (NPDES) Permit, issued by the State Water Resources Control Board (SWRCB) and enforced by Region 2, the Department is required to consider and incorporate Best Management Practices (BMPs) to minimize, or prevent, any potential increase to existing water quality impacts. Such BMPs include temporary and permanent measures, and shall be implemented using Best Available Technology (BAT) to the Maximum Extent Practicable (MEP). Temporary measures include Construction Site BMPs. Permanent measures include Design Pollution Prevention, Maintenance, and Treatment BMPs. The following Sections 4, 5, 6, and 7 further detail these BMPs.

3. Regional Water Quality Control Board Agreements

Caltrans then met with representatives of Region 2 on March 24, 2009 to present the Parkway scope and purpose, the accelerated schedule, and permanent stormwater treatment strategy. During this presentation, Region 2 voiced concerns of Treatment BMP (T-BMP) type-selection; Region 2 prefers incorporation of solely vegetated systems.

The 401 certification process began with submission of the application on April 27, 2009, with a desired approval date of June 1, 2009. The 401 certification shall be issued for the Parkway, not just Contract 3, and will include milestones for deliverables, to ensure that the Department is progressing with the certified commitments.

4. Describe Proposed Design Pollution Prevention BMPs to be used on the Project.

Design Pollution Prevention BMPs are permanent features incorporated as part of project design to provide source control and slope stabilization, thus minimizing overall erosion potential. Design Pollution Prevention BMPs shall be incorporated pursuant with the Erosion Control requirements detailed in the contract plans and Special Provisions. Please see "Supplemental Attachments" for the Contract 3 Erosion Control (EC) sheets.

Existing vegetation in the contract area generally consists of weedy species and native grasses. The project has been designed to minimize areas of disturbance to accommodate road improvements and existing vegetation will be retained to the maximum extent practicable (MEP). Any disturbed areas shall be re-vegetated with 'Type D' hydroseed to provide soil stabilization, in the interim, between Contract 3 and the forthcoming landscape contract (Contract 8).

Further, Environmentally Sensitive Areas (ESAs) will be fenced to exclude construction access and activity from potentially damaging areas of biological and/or cultural significance.

5. Describe Proposed Permanent Treatment BMPs to be used on the Project

As stated above in Section 2, the Parkway has an approximate net increased impervious area of 27.3 acres, and, of that, the Contract 3 portion is approximately 8 acres. To achieve the total treatment goal, T-BMPs have been explored, both, within and downstream of the Department easement. Regardless of the ultimate locations, all T-BMPs servicing the Parkway, will flow to the eastern and western outfalls.

Due to Region 2 concerns over T-BMP type selection, the Department is progressing with Biofiltration Systems as the preferred choice. Biofiltration Systems include strips and swales ("biostrrips," and "bioswales," respectively), and are suitable for the removal of total suspended solids (TSS), particulate metals, and litter. Although a TMDL has been approved for mercury (see Section 2), this pollutant of concern has not been historically detected in roadway run-off. Thus, in the vetting process for T-BMP selection, the "General Purpose Pollutant Removal" strategy was approached. As part of this strategy, biostrrips and bioswales were part of the best and second-best classes, respectively.

As stated above, 27.3 acres is the overall permanent stormwater treatment goal. The Department has committed to Region 2, though pending the approval of the 401 certification, that 100% of the 27.3 acres will be treated, and that the necessary T-BMPs will be functioning by completion of the final roadway contract (Contract 7). Contract 7 is the northbound side of Contract 3. Although T-BMP locations have been identified for the drainage systems servicing Contracts 3 and 7, none will be constructed under Contract 3.

6. Describe Proposed Temporary Construction Site BMPs to be used on Project

Whereas the scope of work includes a disturbed soil area of approximately 5 acres, a Stormwater Pollution Prevention Plan (SWPPP) is required. The SWPPP shall be prepared by the Contractor, submitted to the Department, and accepted by the Department Office of Construction, prior to commencement of construction activities.

To comply with the Department NPDES Permit (see Section 1), temporary Construction Site BMPs shall be properly implemented to minimize, or prevent, any impacts to downstream existing water quality due to construction operations. Construction of Contract 3 is anticipated to be active throughout two (2) rainy seasons; the rainy season is defined as October 15th through April 15th.

The temporary Construction Site BMP strategy for this project shall consist of the following:

- Stabilized construction entrances will be placed at defined points of entrance/exit from existing roadways to construction areas, in order to reduce the tracking of debris to local Presidio roads,
- Temporary drainage inlet protection will be implemented to reduce soil/sediment, debris, and construction materials from entering the storm drain system,
- Street sweeping practices will be utilized to remove sediments tracked from the construction site onto roads and paved areas, as a means to prevent the sediment and debris from entering the storm drain system,
- Temporary silt fence will be used as a linear sediment barrier, placed at the toe of disturbed slopes to intercept and slow the flow of stormwater run-off,
- Temporary gravel bag berm will be used as a linear sediment barrier where silt fencing is impractical,
- Temporary check dam will be included for deployment as a means of sediment control, placed across areas of concentrated flow, slowing runoff and allowing sediment to fall out of suspension,
- Temporary cover will be included for use, in the event disturbed soil areas need to be temporarily protected from wind or rain,
- Concrete washout (portable) will be included to properly manage concrete solid wastes and slurries,
- Temporary hydraulic mulch will be applied to disturbed areas requiring temporary protection.
- Temporary Erosion Control (Netting) will be applied for small areas that have high erosion potential, such as bridge abutments.
- Temporary Erosion Control (Blanket) will be used when disturbed soils may be difficult to stabilize, eg. in steep slopes, stockpiles, slope near ESAs.
- Temporary Erosion Control (Move in/Move out) will be provided for the mobilization of labor, material, and equipments to stabilize soil during each months of the raining season.

Additionally, Construction Site Management is recommended as a lump sum to cover water pollution control applications not discussed above. Applicable temporary Construction Site BMPs are included as part of the contract Water Pollution Control Plans.

Groundwater is anticipated to be encountered at varying locations within Contract 3. Drilling for cast-in-drilled-hole (CIDH) southbound High Viaduct foundations, excavation for retaining wall foundations, and trenching for installation of drainage pipes (specifically toward to the contract's eastern terminus), are operations that require dewatering. The Department Office of Water Quality received approval, by Department Headquarters Office Engineer, on June 2, 2009, of a nonstandard specification (NSSP) for dewatering. The Contractor shall develop and submit a Dewatering Plan for Department approval. The Department Office of Water Quality, as of June 2, 2009, is in continued discussions with the Offices of Geotechnical Services concerning groundwater flow rates.

7. Maintenance BMPs (Drain Inlet Stenciling)

For any drain inlet which be encountered by pedestrians and/or cyclists, drain inlet stenciling shall be required.

REQUIRED ATTACHMENTS

- ⇒ Vicinity Map
- ⇒ Evaluation Documentation Form
- ⇒ Construction Site BMP Consideration Form

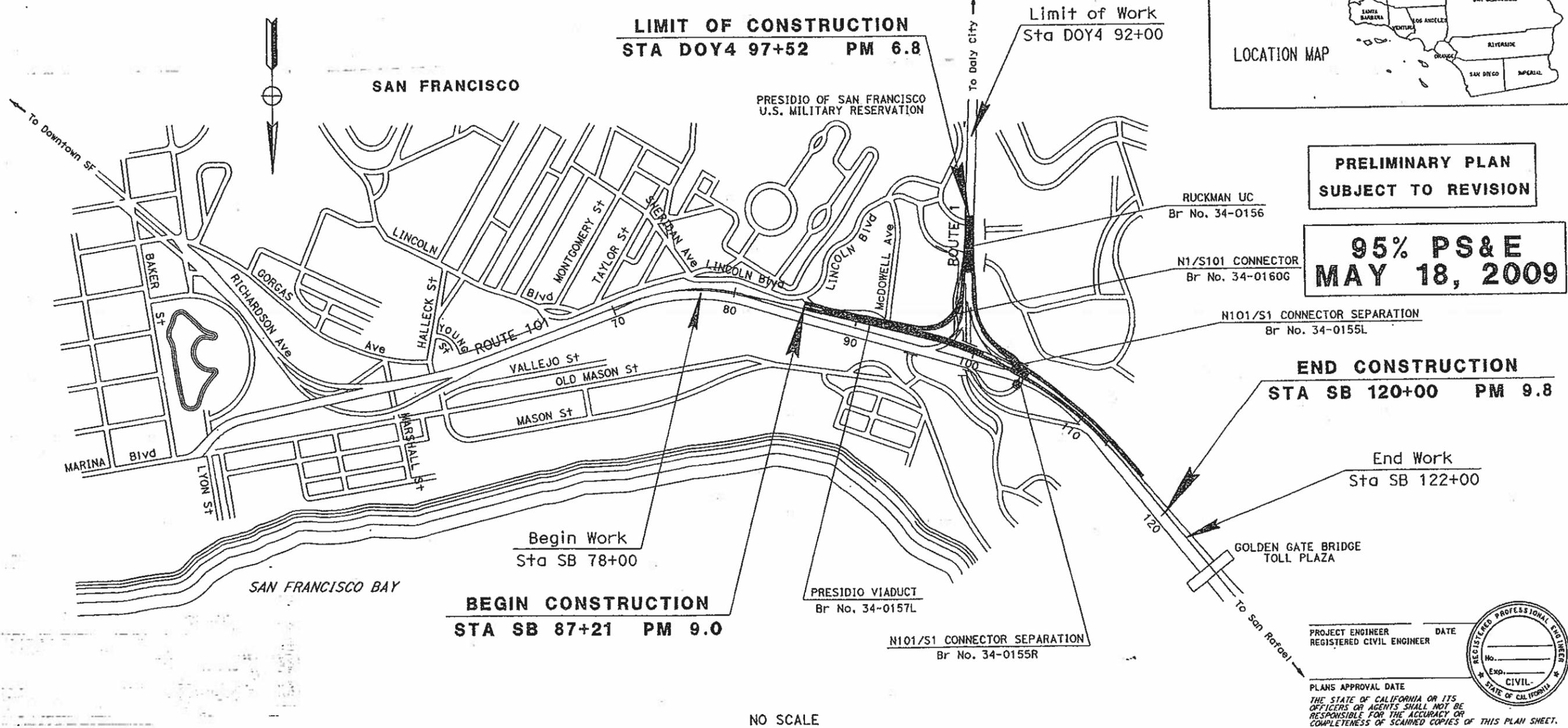
SUPPLEMENTAL ATTACHMENTS

- ⇒ Erosion Control Plans (95% PS&E)
- ⇒ Drainage Plans (95% PS&E)
- ⇒ Checklist SW-1, Site Data Sources
- ⇒ Checklist SW-2, Storm Water Quality Issues Summary
- ⇒ Checklists DPP-1, Parts 1-5 (Design Pollution Prevention BMPs)
- ⇒ Checklists T-1, Part 1 (Treatment BMPs)
- ⇒ Checklists CS-1, Parts 1-6 (Construction Site BMPs)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY

IN THE CITY AND COUNTY OF SAN FRANCISCO
AT THE ROUTE 101/1 SEPARATION
TO GOLDEN GATE BRIDGE TOLL PLAZA

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006



PRELIMINARY PLAN
SUBJECT TO REVISION

95% PS&E
MAY 18, 2009

PROJECT MANAGER
NIDAL TUOAN
DESIGN ENGINEER
ABOLFAZL EMADZADEH

PROJECT ENGINEER
REGISTERED CIVIL ENGINEER



PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

CONTRACT No. 04-163734



DATE PLOTTED => 15-MAY-2009
TIME PLOTTED => 13:01
LAST REVISION 05-15-09

Evaluation Documentation Form

DATE: 06/02/2009

See Figure 4-1, Project Evaluation Process for Consideration of Permanent Treatment BMPs

EA: 04-163731

NO.	CRITERIA	YES	NO	SUPPLEMENTAL INFORMATION FOR EVALUATION
1.	Begin Project Evaluation regarding requirement for consideration of Treatment BMPs	<input checked="" type="checkbox"/>		Go to 2
2.	Is this an emergency project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If Yes , go to 11. If No , continue to 3.
3.	Have TMDLs OR OTHER Pollution Control Requirements been established for surface waters within the project limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If Yes , contact the District/Regional NPDES coordinator to discuss the Department's obligations under the TMDL (if Applicable) or Pollution Control Requirements, go to 10 or 4 (as determined by the NPDES Coordinator). <u>BJR</u> (Dist./Reg. SW Coordinator initials) If No , continue to 4.
4.	Is the project within an urban MS4?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If Yes , continue to 5. <u>Presidio/SFPUC</u> If No , go to 11.
5.	Is the project directly or indirectly discharging to surface waters?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If Yes , continue to 6. If No , go to 11.
6.	Is this a new facility or major reconstruction?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If Yes , continue to 8. If No , go to 7.
7.	Will there be a change in line/grade or hydraulic capacity?	<input type="checkbox"/>	<input type="checkbox"/>	If Yes , continue to 8. If No , go to 11.
8.	Is the Disturbed Soil Area (DSA) created by the project <u>greater than or equal to 3.0 acres</u> or does the project result in a <u>net increase of one acre or more of new impervious surface</u> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If Yes , continue to 10. If No , go to 9. <u>DSA = 5 acres; net incr imp = 8 acres</u>
9.	Is the project part of a Common Plan of Development?	<input type="checkbox"/>	<input type="checkbox"/>	If Yes , continue to 10. If No , go to 11.
10.	Project is required to consider approved Treatment BMPs.	<input checked="" type="checkbox"/>		See Sections 2.4 and either Section 5.5 or 6.5 for BMP Evaluation and Selection Process. Complete Checklist T-1 in this Appendix E.
11.	Project is not required to consider Treatment BMPs. _____ (Dist./Reg. SW Coord. Initials) _____ (Project Engineer Initials) _____ (Date)	<input type="checkbox"/>		Document for Project Files by completing this form, and attaching it to the SWDR.

See Figure 4-1, Project Evaluation Process for Consideration of Permanent Treatment BMPs

Construction Site BMP Consideration Form

DATE: 06/02/2009

Project Evaluation Process for the Consideration of Construction Site BMPs

EA: 04-163731

NO.	CRITERIA	YES	NO	SUPPLEMENTAL INFORMATION
1.	Will construction of the project result in areas of disturbed soil as defined by the Project Planning and Design Guide (PPDG)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If Yes, Construction Site BMPs for Soil Stabilization (SS) will be required. Complete CS-1, Part 1. Continue to 2. If No, Continue to 3.
2.	Is there a potential for disturbed soil areas within the project to discharge to storm drain inlets, drainage ditches, areas outside the right of way, etc?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If Yes, Construction Site BMPs for Sediment Control (SC) will be required. Complete CS-1, Part 2. Continue to 3.
3.	Is there a potential for sediment or construction related materials and wastes to be tracked offsite and deposited on private or public paved roads by construction vehicles and equipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If Yes, Construction Site BMPs for Tracking Control (TC) will be required. Complete CS-1, Part 3. Continue to 4.
4.	Is there a potential for wind to transport soil and dust offsite during the period of construction?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If Yes, Construction Site BMPs for Wind Erosion Control (WE) will be required. Complete CS-1, Part 4. Continue to 5.
5.	Is dewatering anticipated or will construction activities occur within or adjacent to a live channel or stream?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If Yes, Construction Site BMPs for Non-Storm Water Management (NS) will be required. Complete CS-1, Part 5. Continue to 6.
6.	Will construction include saw-cutting, grinding, drilling, concrete or mortar mixing, hydro-demolition, blasting, sandblasting, painting, paving, or other activities that produce residues?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If Yes, Construction Site BMPs for Non-Storm Water Management (NS) will be required. Complete CS-1, Part 5. Continue to 7.
7.	Are stockpiles of soil, construction related materials, and/or wastes anticipated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If Yes, Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Complete CS-1, Part 6. Continue to 8.
8.	Is there a potential for construction related materials and wastes to have direct contact with precipitation; storm water run-on, or stormwater runoff; be dispersed by wind; be dumped and/or spilled into storm drain systems?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If Yes, Construction Site BMPs for Waste Management and Materials Pollution Control (WM) will be required. Complete CS-1, Part 6. Continue to 9. <i>H.P.C.</i>
9.	End of checklist.	<input checked="" type="checkbox"/>		Document for Project Files by completing this form, and attaching it to the SWDR.

FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

LEGEND:

- /// /// /// FIBER ROLLS
- ▨ EROSION CONTROL (NETTING) OVER EROSION CONTROL (COMPOST BLANKET)
- TFESA—xx— TEMPORARY FENCE (TYPE ESA)
- x—x—x— EXISTING FENCE

ABBREVIATIONS:

TCE TEMPORARY CONSTRUCTION EASEMENT

NOTE:

1. EXACT LIMITS OF WORK OR DEPLOYMENT OF EROSION CONTROL MATERIALS SHALL BE DETERMINED BY THE ENGINEER.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SF	101, 1	9.0/9.8, 6.8/7.1		

Alex McDonald
LICENSED LANDSCAPE ARCHITECT

PLANS APPROVAL DATE

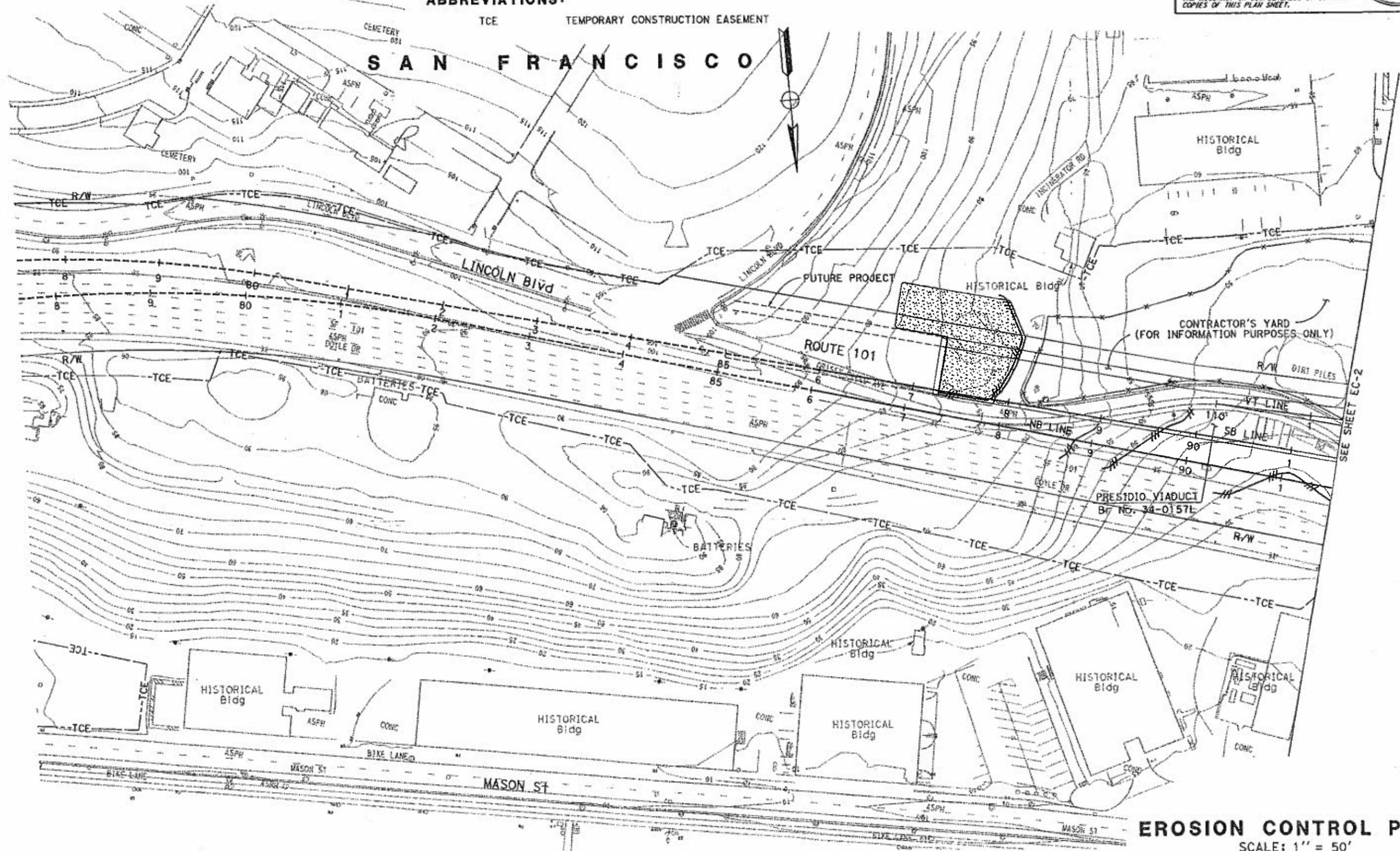
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans LANDSCAPE ARCHITECTURE

SENIOR LANDSCAPE ARCHITECT: DAVID W. YAM

CALCULATED-DESIGNED BY: Alex McDonald
CHECKED BY: Jennifer Egawa

REVISED BY: Alex McDonald
DATE REVISED: Jennifer Egawa



EROSION CONTROL PLAN
SCALE: 1" = 50'

EC-1

THIS PLAN ACCURATE FOR EROSION CONTROL WORK ONLY.

RELATIVE BORDER SCALE
IN INCHES



USERNAME => 8130924
NON ENG => 4187740001

CU 04343

EA 163731

BORDER LAST REVISED 4/11/2008

DATE PLOTTED => 03-JUN-2009
TIME PLOTTED => 07:55

FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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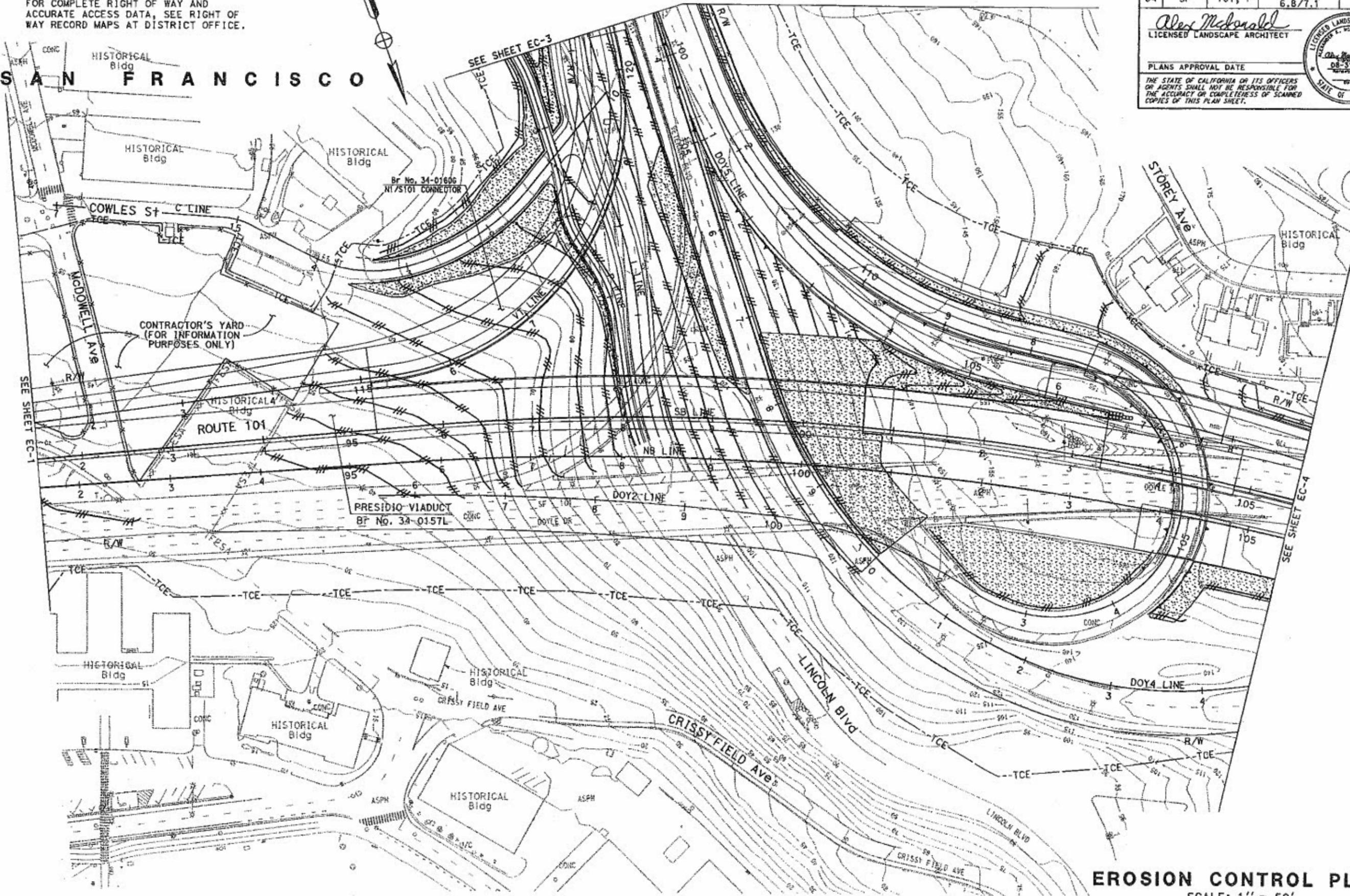
Alex McDonald
LICENSED LANDSCAPE ARCHITECT

PLANS APPROVAL DATE: 08-31-10

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LICENSED LANDSCAPE ARCHITECT
ALEX MACDONALD
08-31-10
STATE OF CALIFORNIA

SAN FRANCISCO



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Caltrans • LANDSCAPE ARCHITECTURE

SENIOR LANDSCAPE ARCHITECT: DAVID W. YAM

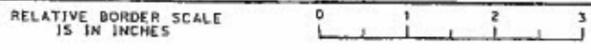
CALCULATED-DESIGNED BY: Alex McDonald
CHECKED BY: Jennifer Egawa

REVISED BY: Alex McDonald
DATE REVISED: Jennifer Egawa

EROSION CONTROL PLAN
SCALE: 1" = 50'

EC-2

THIS PLAN ACCURATE FOR EROSION CONTROL WORK ONLY.



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DGN FILE => 4163730a002.dgn

CU 04343

EA 163731

BORDER LAST REVISED 4/11/2008

DATE PLOTTED => 03-JUN-2009
TIME PLOTTED => 08:04

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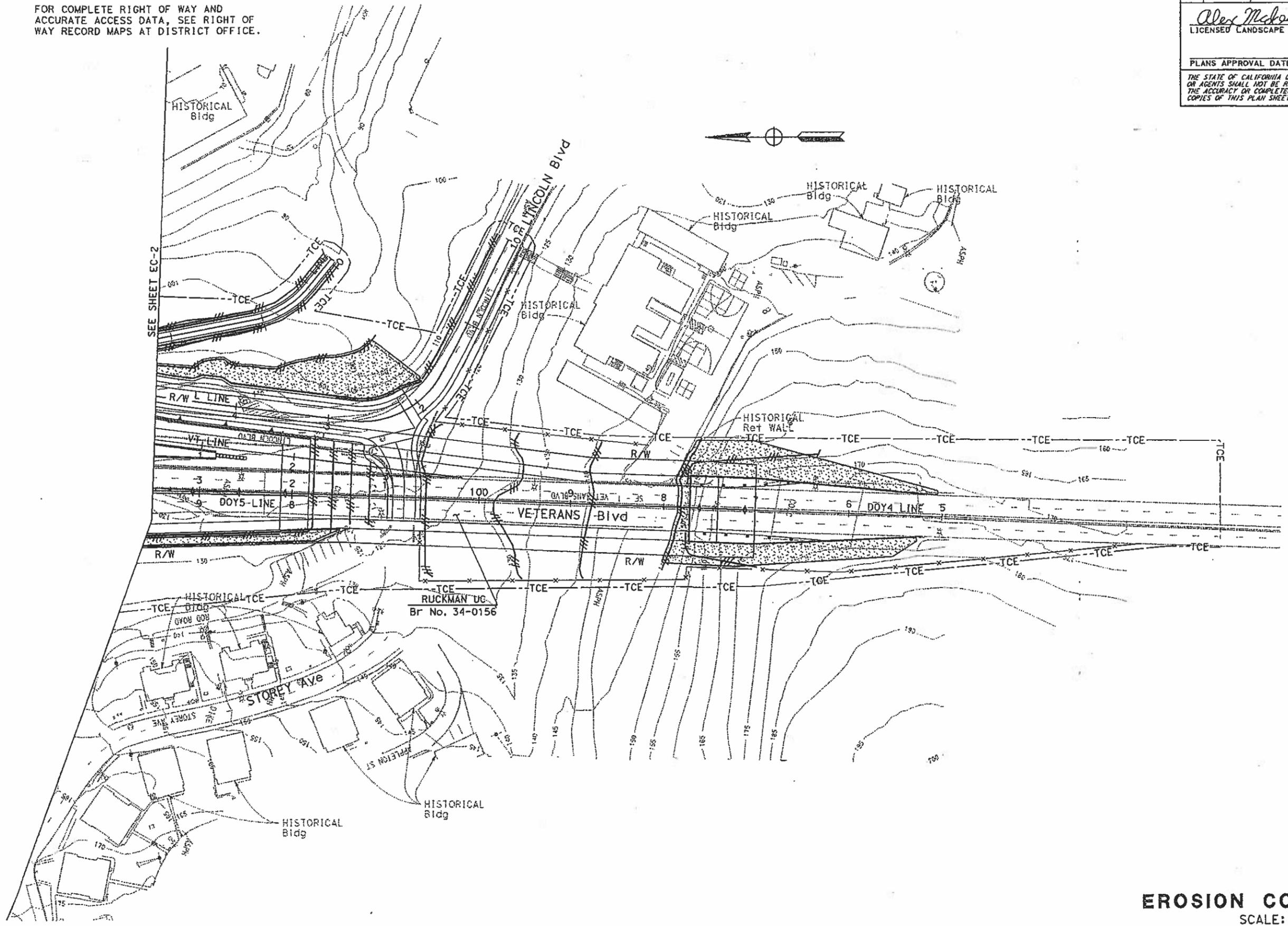
Alex McDonald
LICENSED LANDSCAPE ARCHITECT

PLANS APPROVAL DATE

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FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

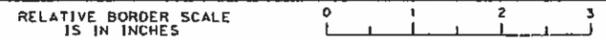
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	SENIOR LANDSCAPE ARCHITECT	CHECKED BY	DESIGNED BY	REVISOR
St. Gobans LANDSCAPE ARCHITECTURE	DAVID W. YAM	Jennifer Egawa	Alex McDonald	
				DATE REVISED



EROSION CONTROL PLAN
SCALE: 1" = 50'

EC-3

THIS PLAN ACCURATE FOR EROSION CONTROL WORK ONLY.



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CU 04343

EA 163731

BORDER LAST REVISED 4/11/2008

DATE PLOTTED => 05-JUN-2009
TIME PLOTTED => 07:54
CASE REVISIONS

FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

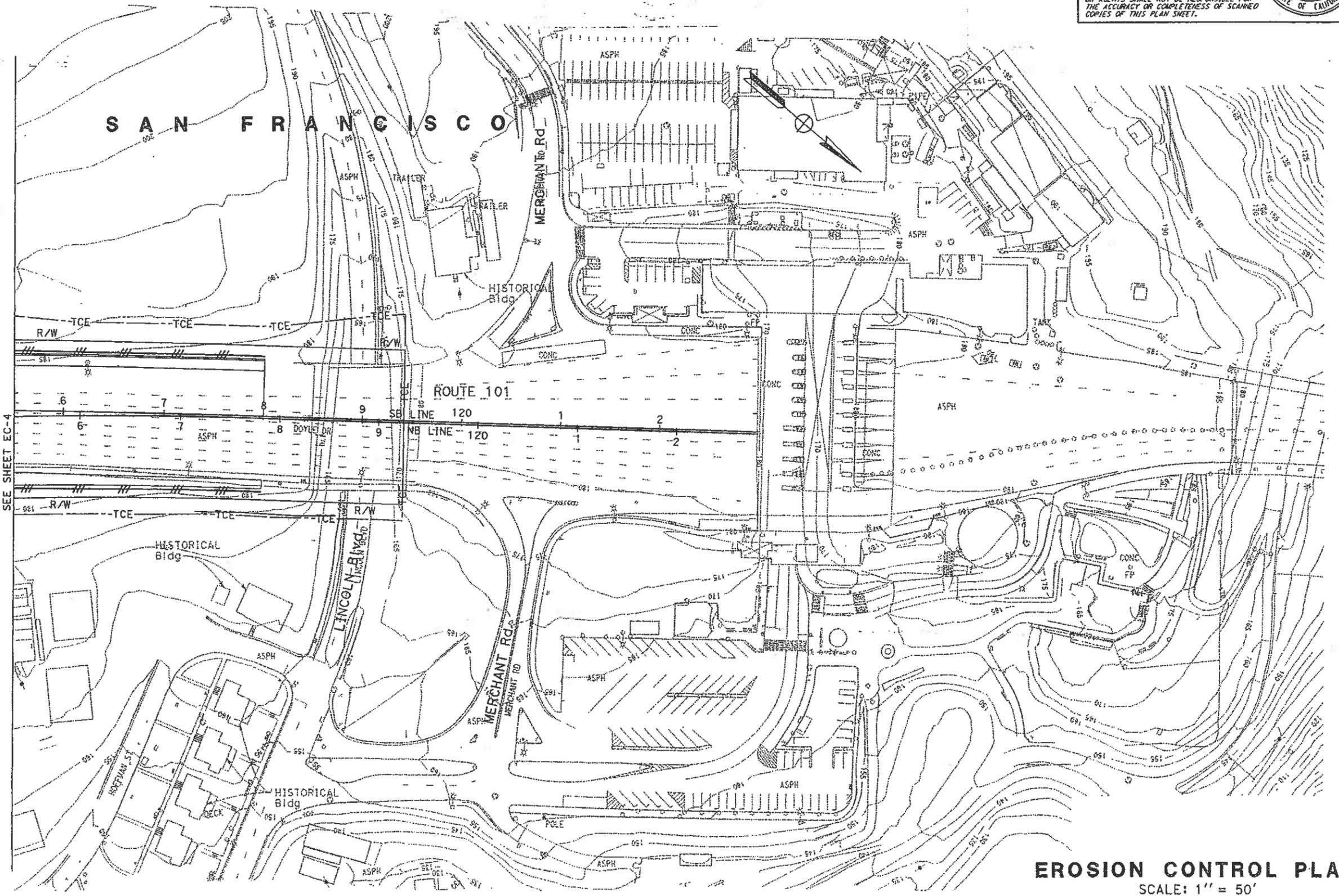
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET TOTAL SHEETS
04	SF	101, 1	9.0/9.8, 6.8/7.1	

Alex McDonald
LICENSED LANDSCAPE ARCHITECT

PLANS APPROVAL DATE: 08-31-10

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Ed. Cattano LANDSCAPE ARCHITECTURE
 SENIOR LANDSCAPE ARCHITECT
 DAVID W. YAM
 CHECKED BY
 CALCULATED-DESIGNED BY
 Alex McDonald
 REVISOR BY
 Jennifer Egawa
 DATE REVISED



EROSION CONTROL PLAN
 SCALE: 1" = 50'

EC-5

THIS PLAN ACCURATE FOR EROSION CONTROL WORK ONLY.



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CU 04343

EA 163731

BORDER LAST REVISED 4/11/2008

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 TIME PLOTTED => 07:57

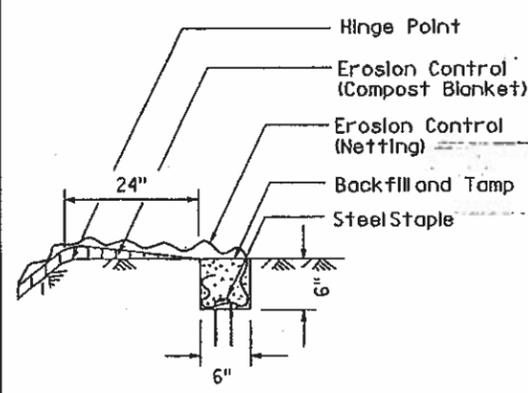
DIST	COUNTY	ROUTE	POST MILES	TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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Alex McDonald
LICENSED LANDSCAPE ARCHITECT

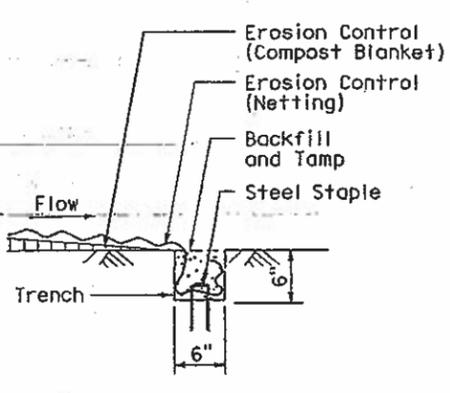
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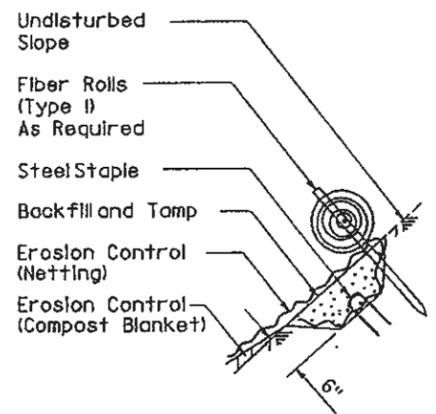
08-31-10
STATE OF CALIFORNIA



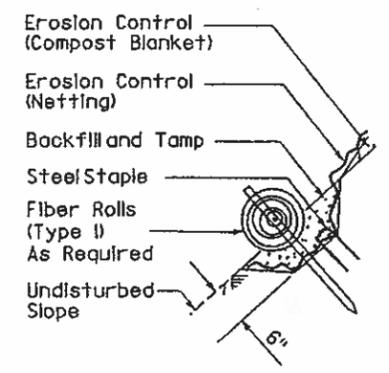
SECTION
DETAIL C
KEY TRENCH AT TOP OF SLOPE



SECTION
DETAIL D
KEY TRENCH



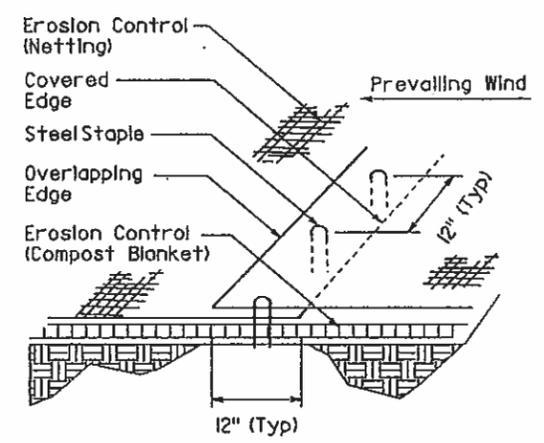
SECTION
DETAIL E
KEY TRENCH AT UPPER CONFORM



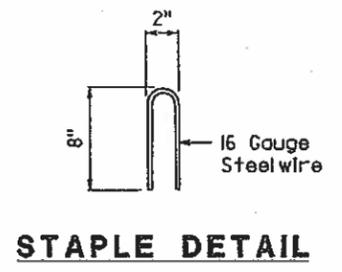
SECTION
DETAIL F
KEY TRENCH AT LOWER CONFORM

NOTES

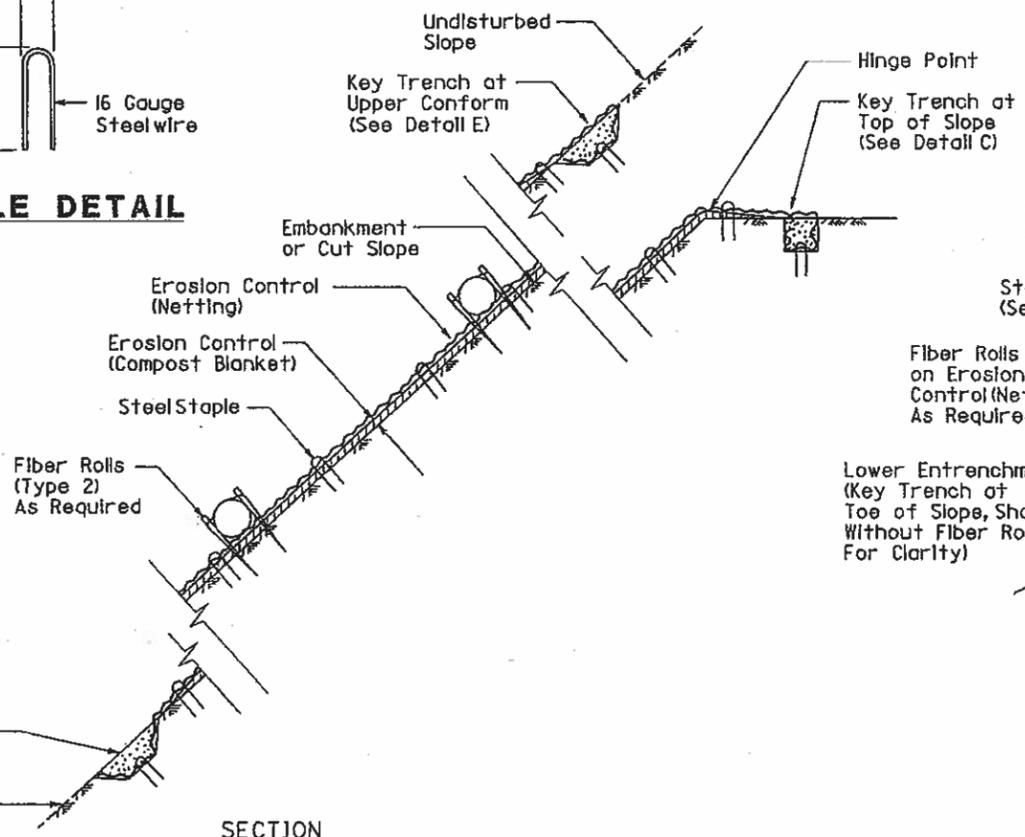
1. Exact limits of Erosion Control work shall be determined by the Engineer.



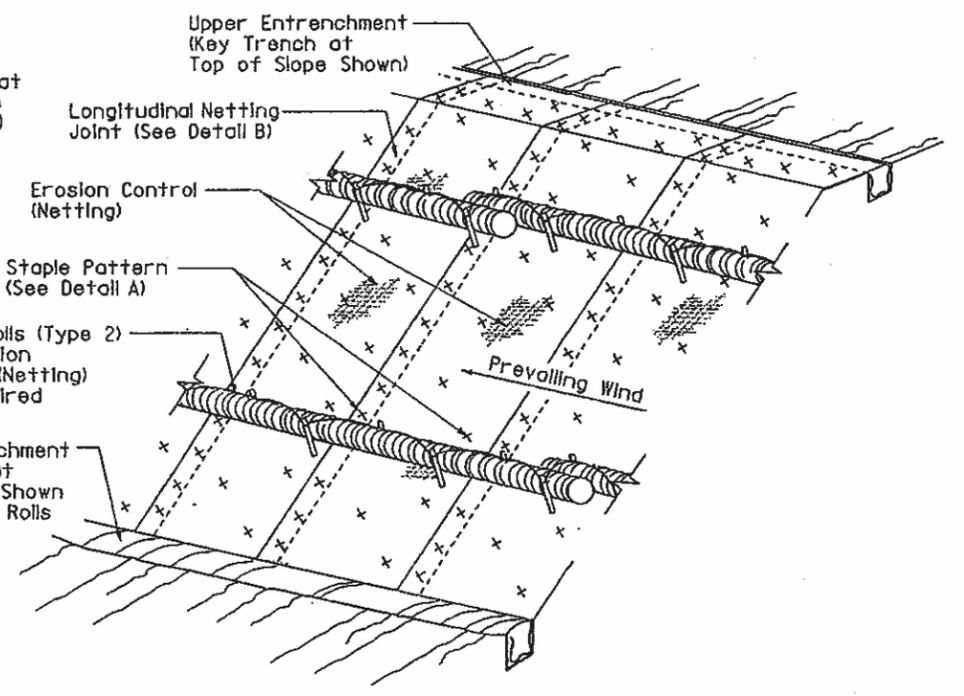
DETAIL B
LONGITUDINAL (NETTING) JOINT



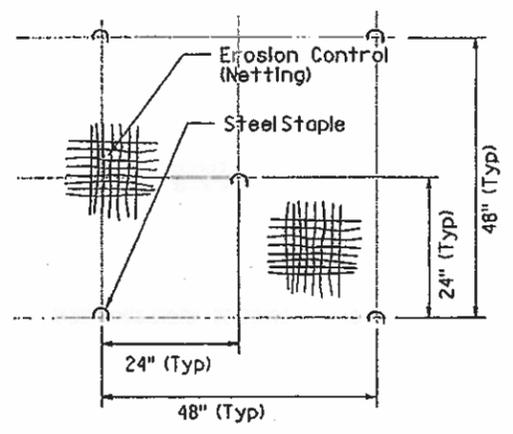
STAPLE DETAIL



SECTION
EROSION CONTROL (NETTING) ON SLOPE WITH VARIOUS KEY ENTRENCHMENTS



ISOMETRIC
EROSION CONTROL (NETTING) ON SLOPE WITH FIBER ROLLS (TYPE 2)



DETAIL A
STAPLE PATTERN

EROSION CONTROL PLAN
NO SCALE

ECD-1

REVISED BY
DATE REVISED

Alex McDonald
Jennifer Egawa

CALCULATED-DESIGNED BY
CHECKED BY

SENIOR LANDSCAPE ARCHITECT
DAVID W. YAM

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Stantec LANDSCAPE ARCHITECTURE

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE
1/5 IN INCHES

USERNAME => s130924
DGN FILE => 416373gr001.dgn

CU 04343

EA 163731

DATE PLOTTED => 03-JUN-2009

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SF	101, 1	9.0/9.8, 6.8/7.1		

Alex McDonald
LICENSED LANDSCAPE ARCHITECT

PLANS APPROVAL DATE _____

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Eti **Caltrans** • LANDSCAPE ARCHITECTURE

SENIOR LANDSCAPE ARCHITECT
 DAVID W. YAM

CALCULATED-
 DESIGNED BY
 CHECKED BY

Alex McDonald
 Jennifer Egawa

REVISED BY
 DATE REVISED

EROSION CONTROL QUANTITIES

SHEET No.	EROSION CONTROL (COMPOST BLANKET)	EROSION CONTROL (NETTING)	HYDRAULIC MULCH (POLYMER STABILIZED FIBER MATRIX)	FIBER ROLLS
	CY	SOYD	ACRE	LF
EC-1	35	1,248	0.58	488
EC-2	235	8,446	3.76	7,608
EC-3	85	3,044	1.08	2,298
EC-4	28	980	0.14	2,026
EC-5	-	-	0.32	500
TOTAL	383	13,718	5.88	12,920

EROSION CONTROL QUANTITIES

NO SCALE

ECQ-1

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

2. ALL TIES TO STORM DRAINAGE MANHOLES ARE TO BE AT THE CENTER OF THE BASE, UNLESS OTHERWISE NOTED.

3. LOCATION OF EXISTING DRAINAGE FACILITIES ARE APPROXIMATE. VERIFY LOCATION AND ELEVATION OF EXISTING DRAINAGE FACILITIES PRIOR TO MODIFYING.

- SD - NEW STORM DRAIN
- sd - Exist STORM DRAIN
- # - Exist ABANDONED STORM DRAIN
- - - - - FUTURE STORM DRAIN (BY OTHERS)

- # DRAINAGE SYSTEM NO
- x DRAINAGE UNIT

- W/ WITH
- PT PRESIDIO TRUST
- SGD STANDARD GUTTER DEPRESSION
- DDJ DOWNDRAIN JOINTS

LICENSED CIVIL ENGINEER



PLANS APPROVAL DATE

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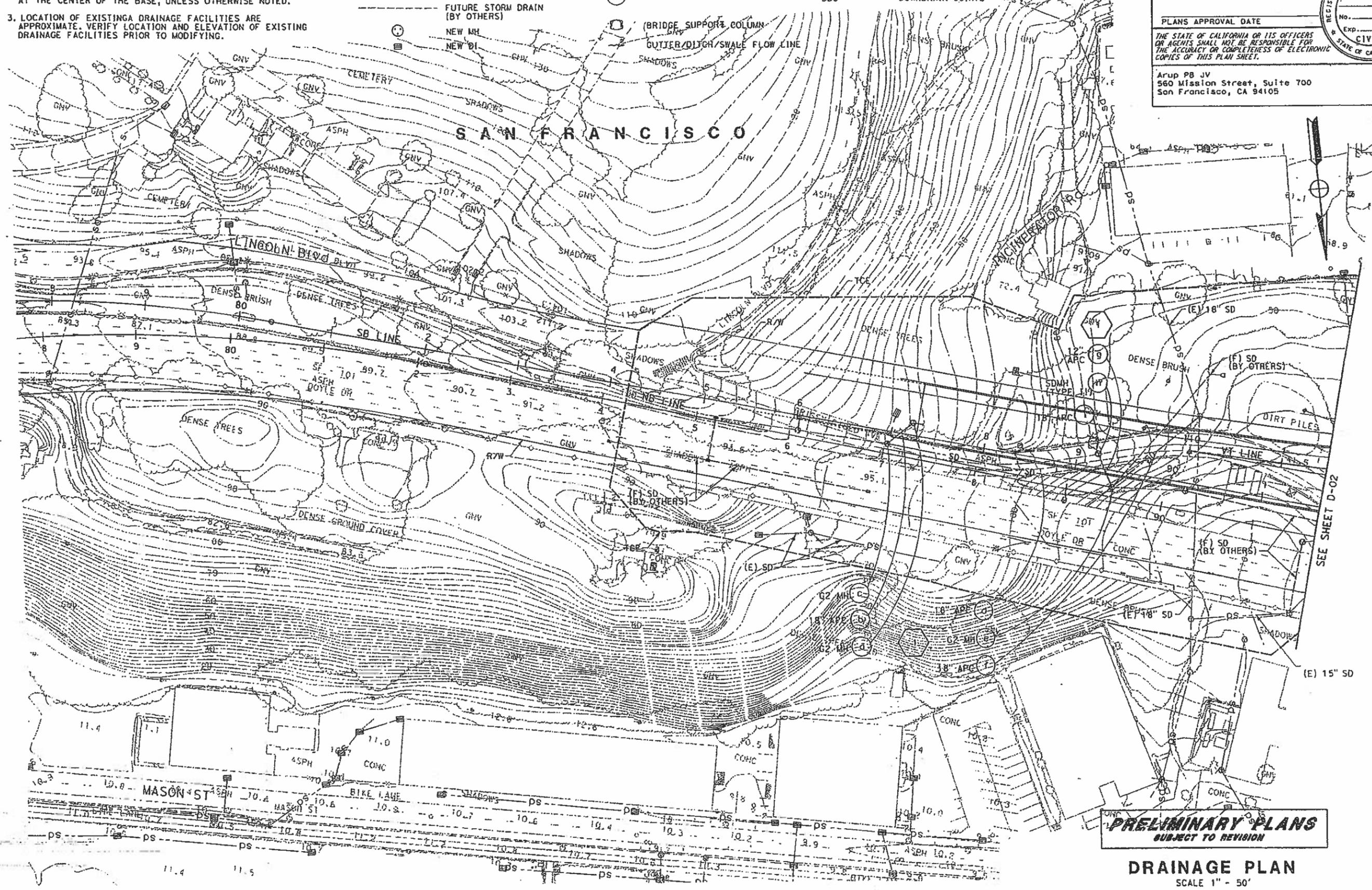
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560 Mission Street, Suite 700
San Francisco, CA 94105

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Caltrans



PRELIMINARY PLANS
SUBJECT TO REVISION

DRAINAGE PLAN
SCALE 1" = 50'

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.
RELATIVE BORDER SCALE 0 1 2 3

D-01

PRELIMINARY PLANS
SUBJECT TO REVISION

NOTES:

- FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
- FOR NOTES, LEGENDS, AND ABBREVIATIONS SEE SHEET D-01.

LICENSED CIVIL ENGINEER

PLANS APPROVAL DATE

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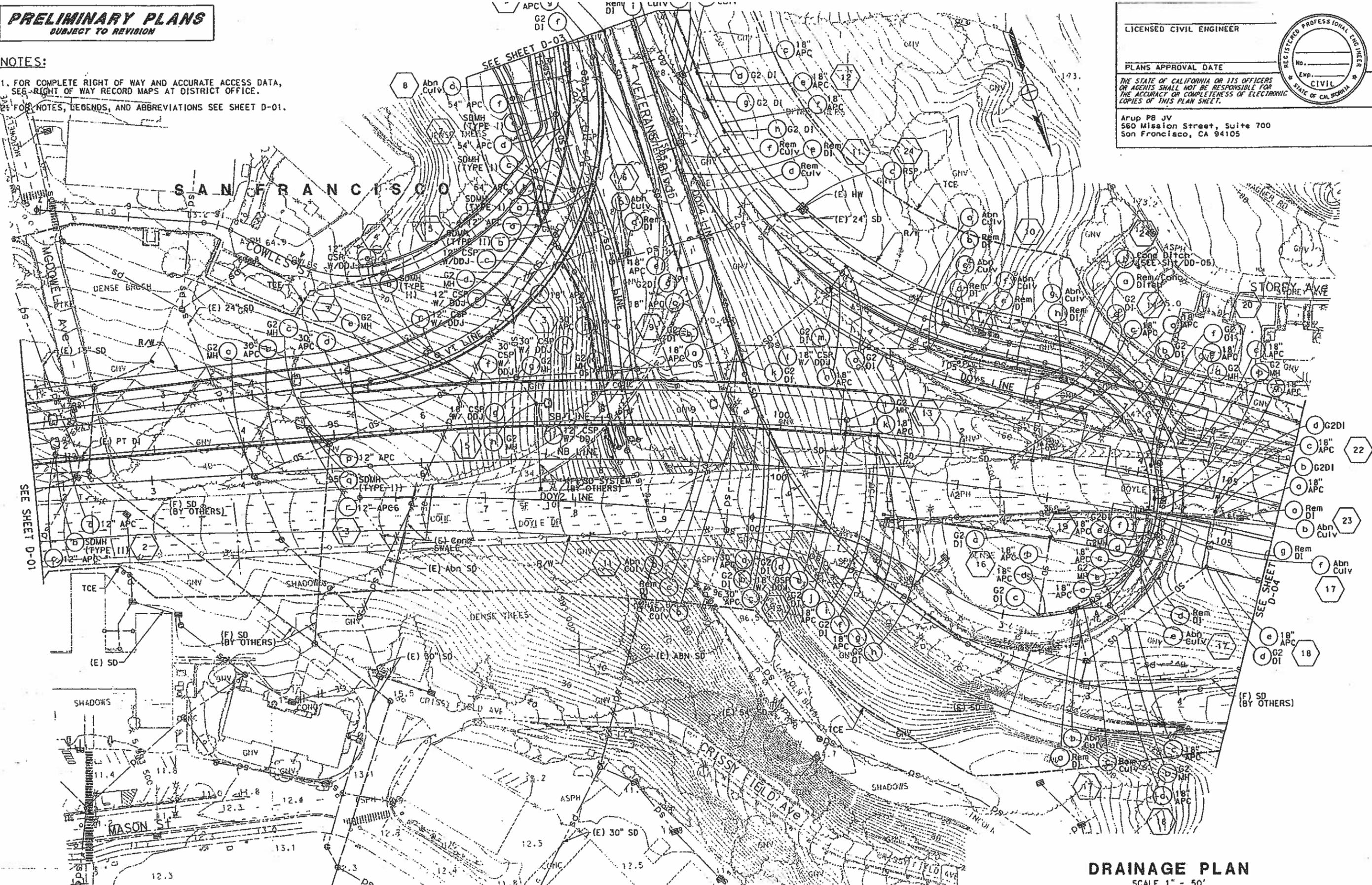


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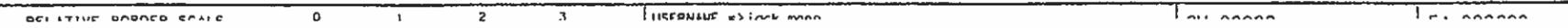
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THIS PLAN ACCURATE FOR UTILITY WORK ONLY.

DRAINAGE PLAN
SCALE 1" = 50'

D-02



NOTES:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
2. FOR NOTES, LEGENDS, AND ABBREVIATIONS SEE SHEET D-01.

PRELIMINARY PLANS
SUBJECT TO REVISION

LICENSED CIVIL ENGINEER

PLANS APPROVAL DATE

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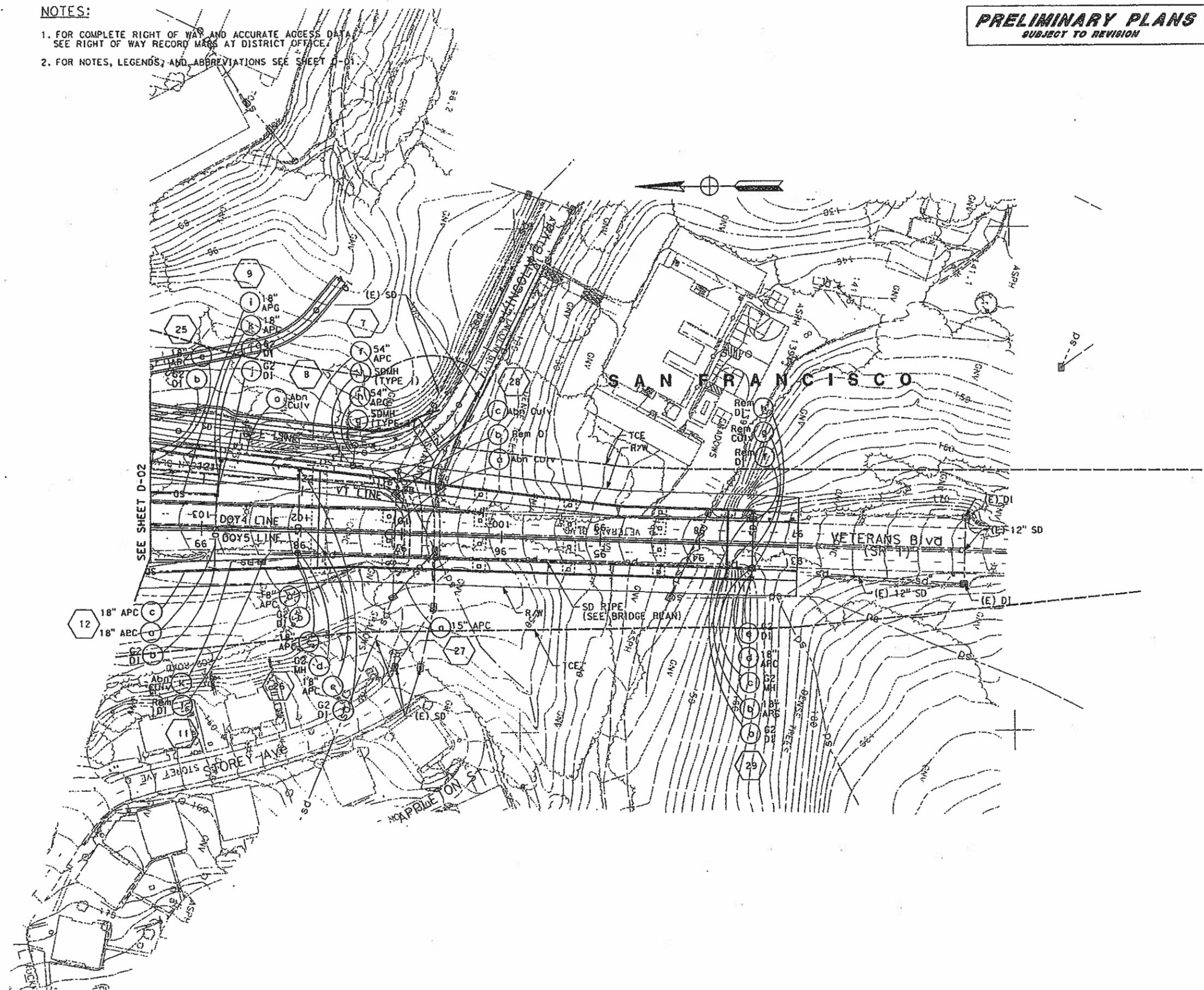
FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED



THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY

DRAINAGE PLAN
SCALE 1" = 50'

D-03

NOTES:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
2. FOR NOTES, LEGEND, AND ABBREVIATIONS SEE SHEET D-01.

LICENSED CIVIL ENGINEER

PLANS APPROVAL DATE

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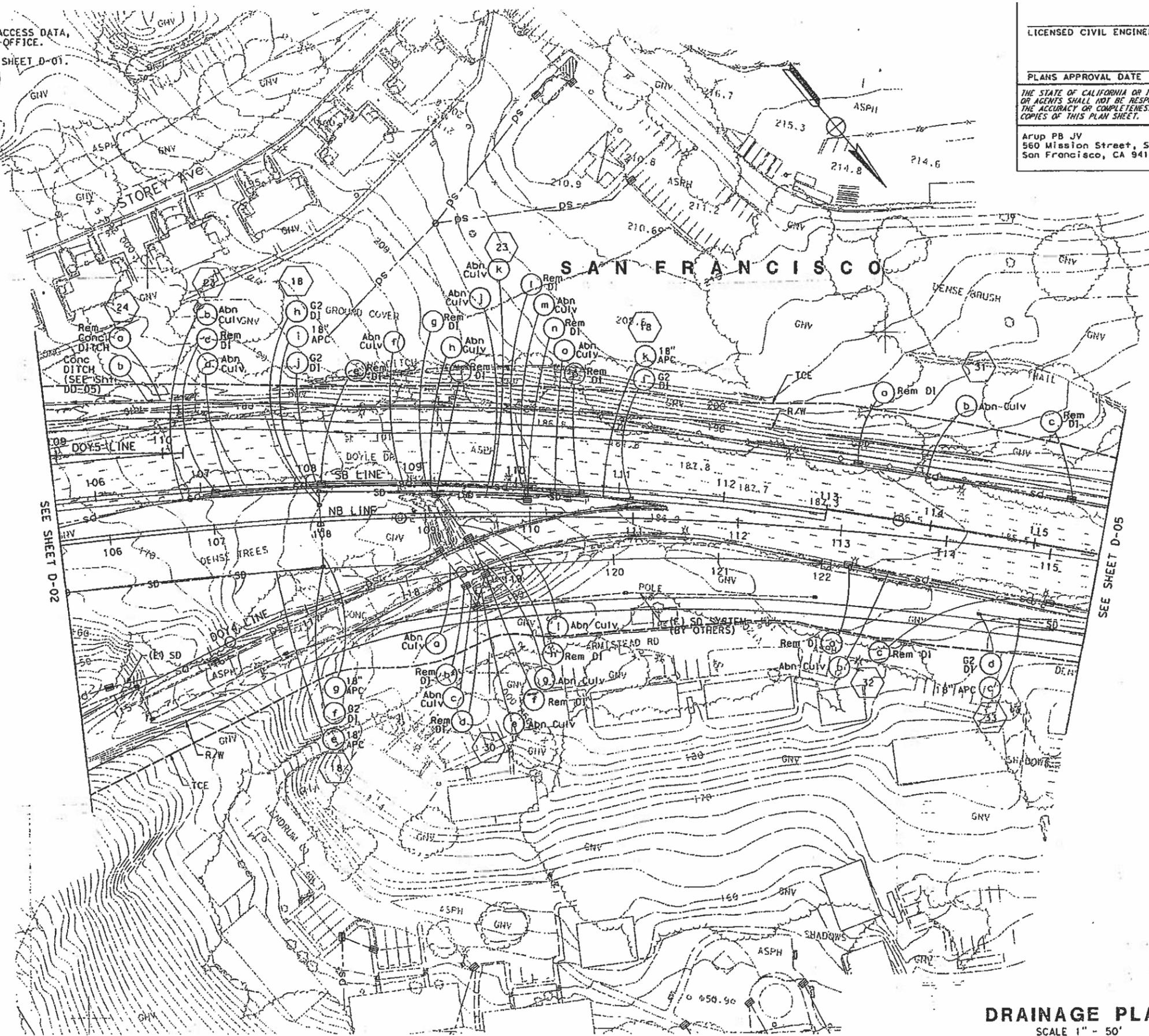
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DEPARTMENT OF TRANSPORTATION

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PRELIMINARY PLANS
SUBJECT TO REVISION

DRAINAGE PLAN
SCALE 1" = 50'

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY

D-04

NOTES:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
2. FOR NOTES, LEGENDS, AND ABBREVIATIONS SEE SHEET D-01.

PRELIMINARY PLANS
SUBJECT TO REVISION

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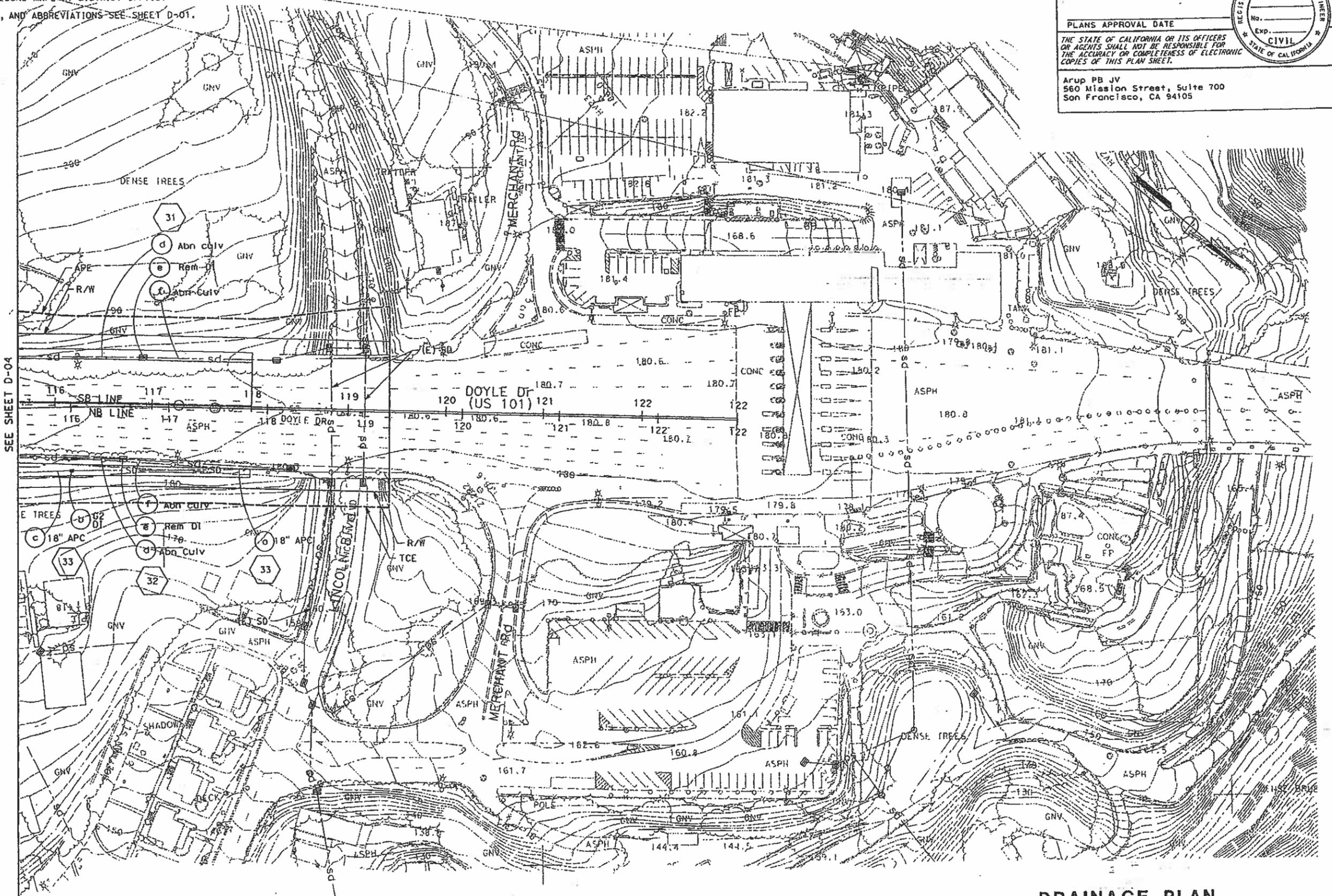


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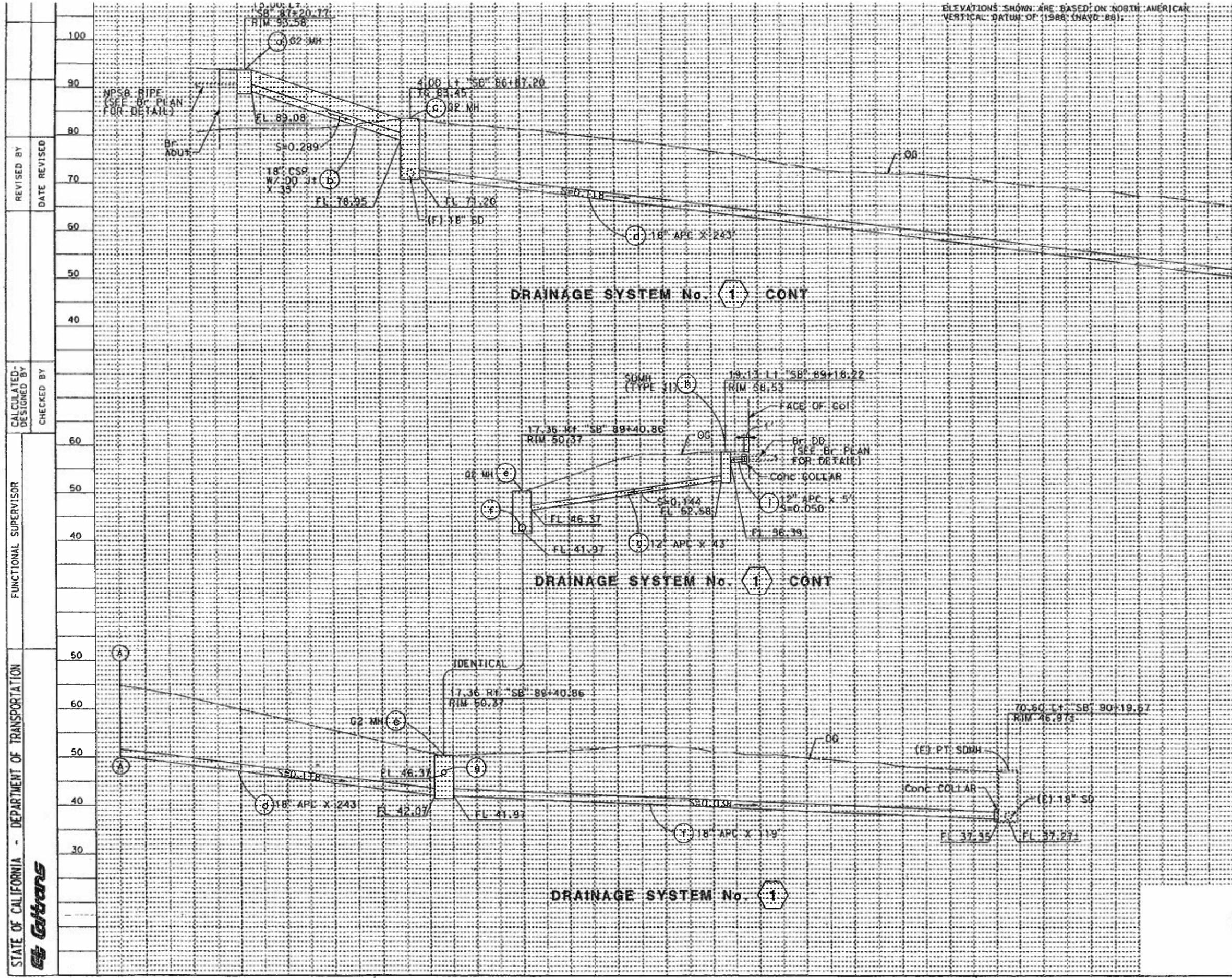


SEE SHEET D-04

DRAINAGE PLAN
SCALE 1" = 50'

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY





ELEVATIONS SHOWN ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

LICENSED CIVIL ENGINEER

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REGISTERED PROFESSIONAL ENGINEER
C. ENGINEER
No. 0000
Exp. DATE
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STATE OF CALIFORNIA

REVISOR BY DATE REVISED

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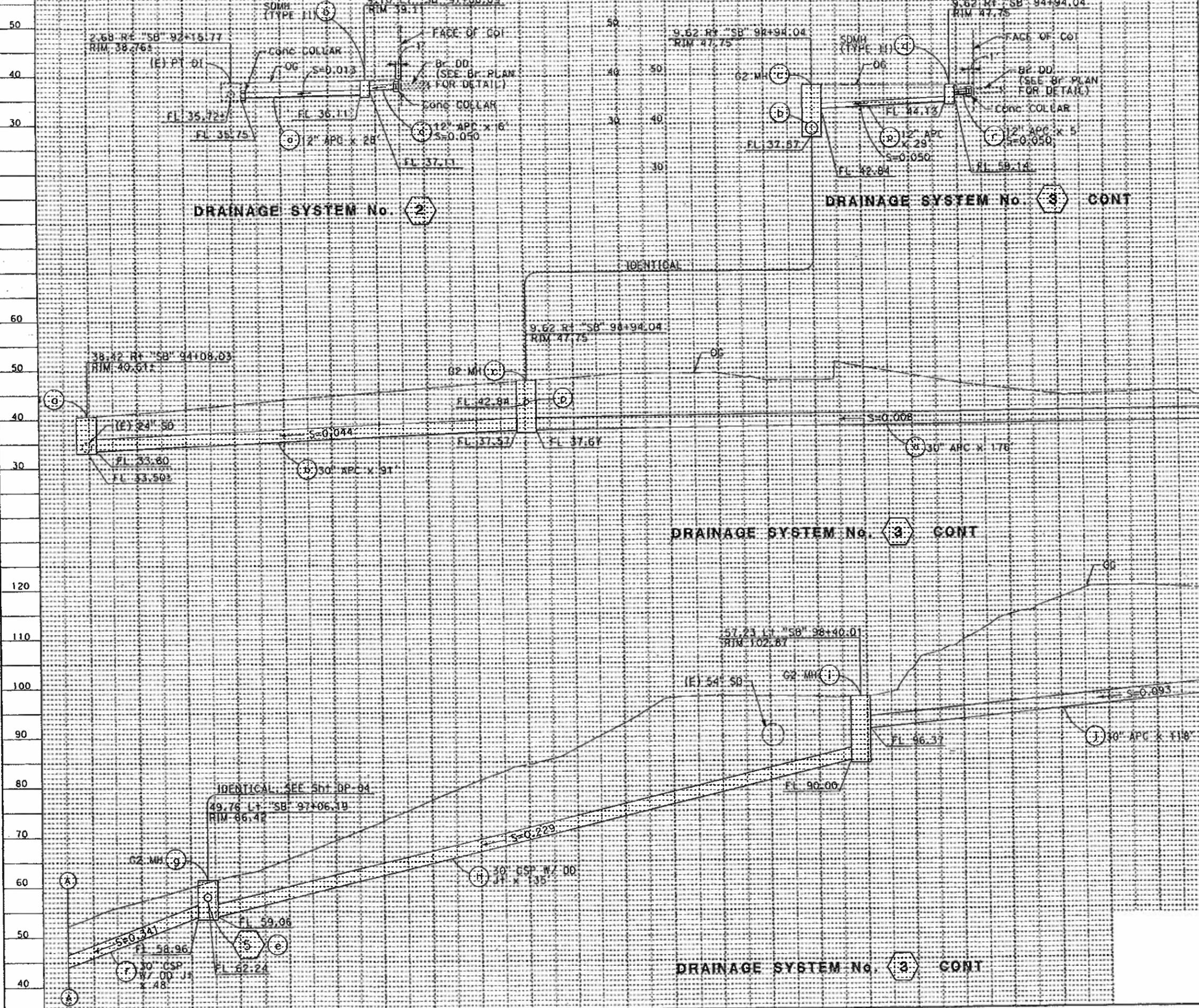
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Caltrans

DRAINAGE PROFILE
SCALE: 1"=10'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Ed Carbons



U4 SF 101 0.07.00

LICENSED CIVIL ENGINEER

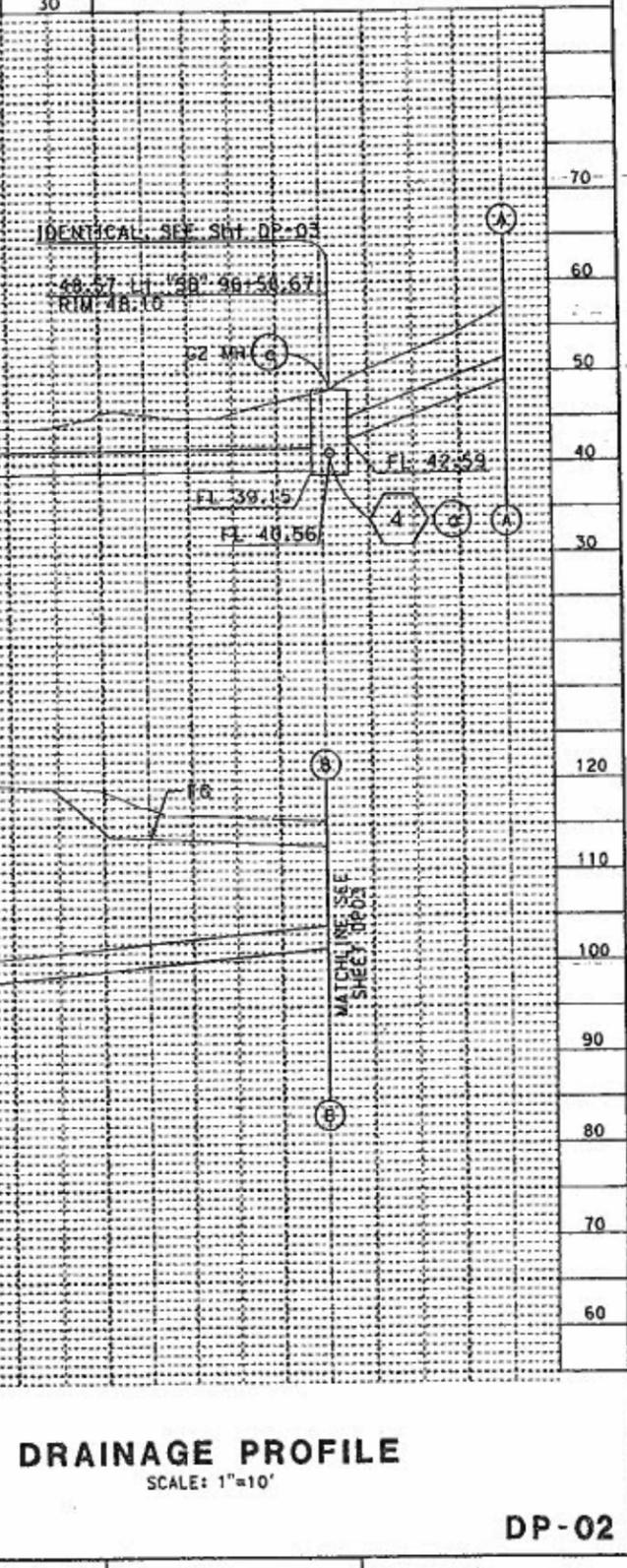
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PLANS APPROVAL DATE

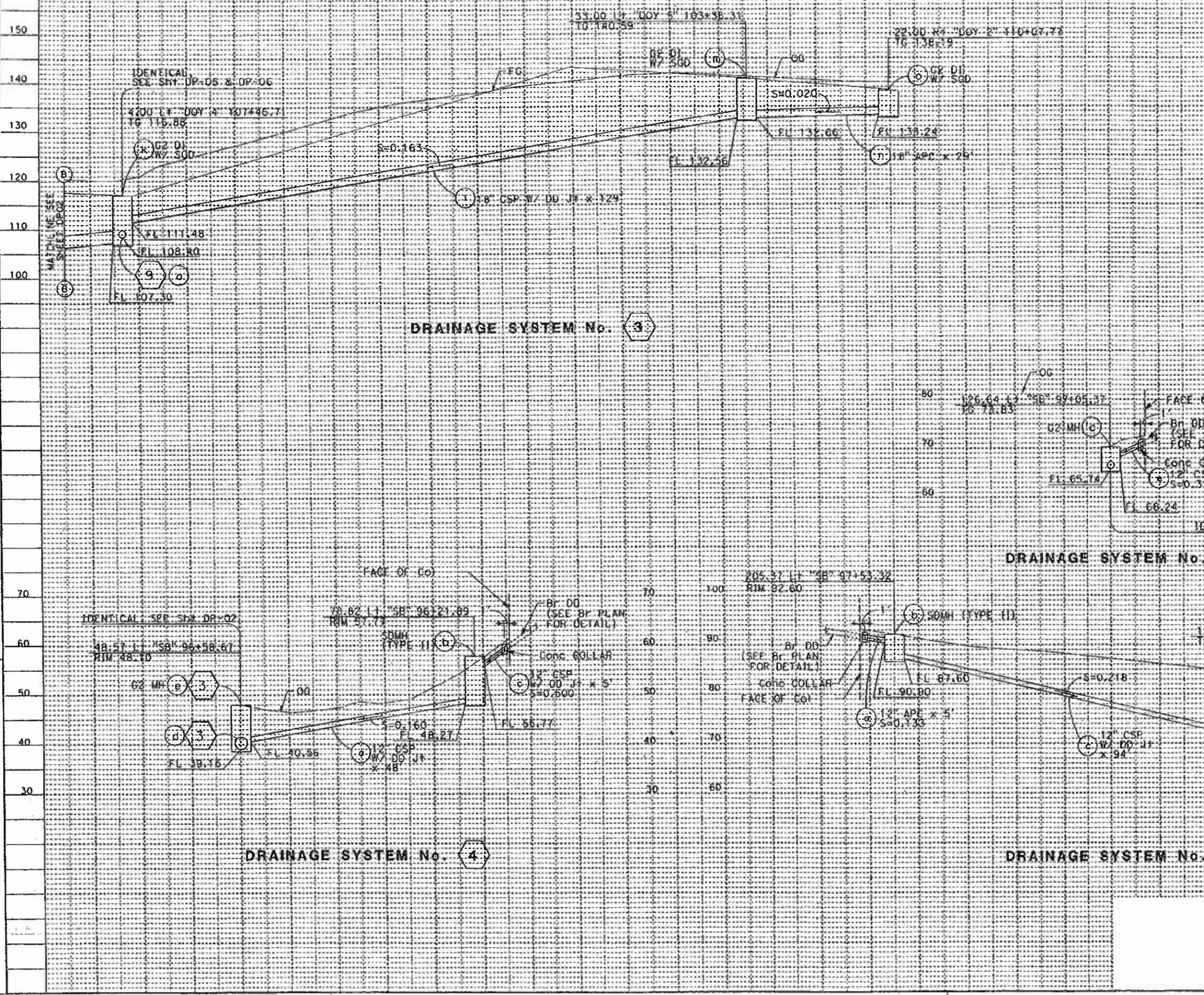
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 C. ENGINEER
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 Exp. DATE
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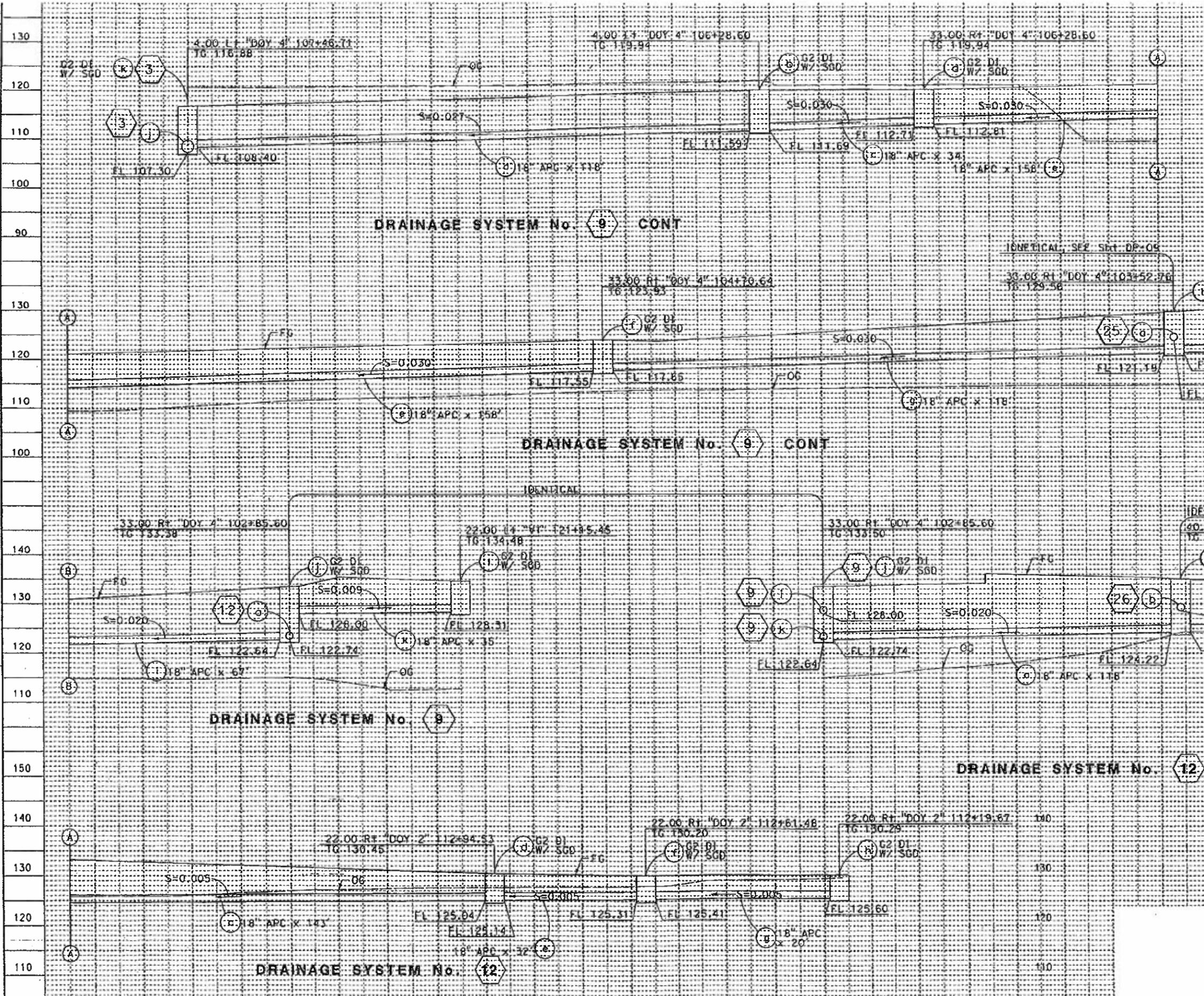
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 No. 0000
 Exp. DATE
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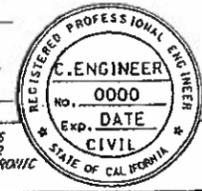
DRAINAGE PROFILE
 SCALE: 1"=10'

DP-03

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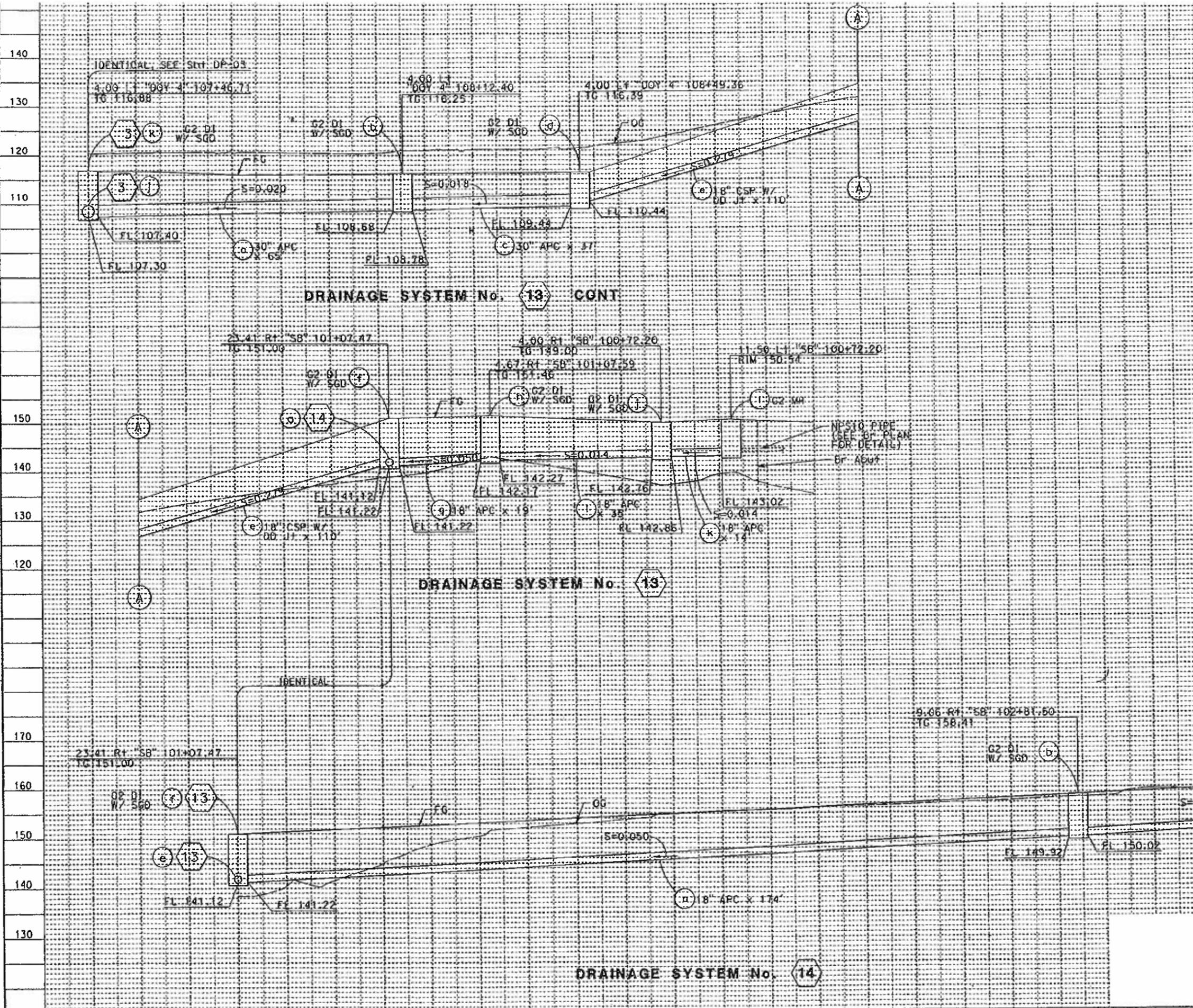


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 DP-05

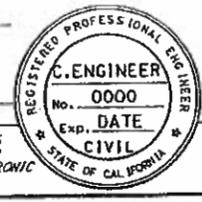
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140	LICENSED CIVIL ENGINEER
130	PLANS APPROVAL DATE
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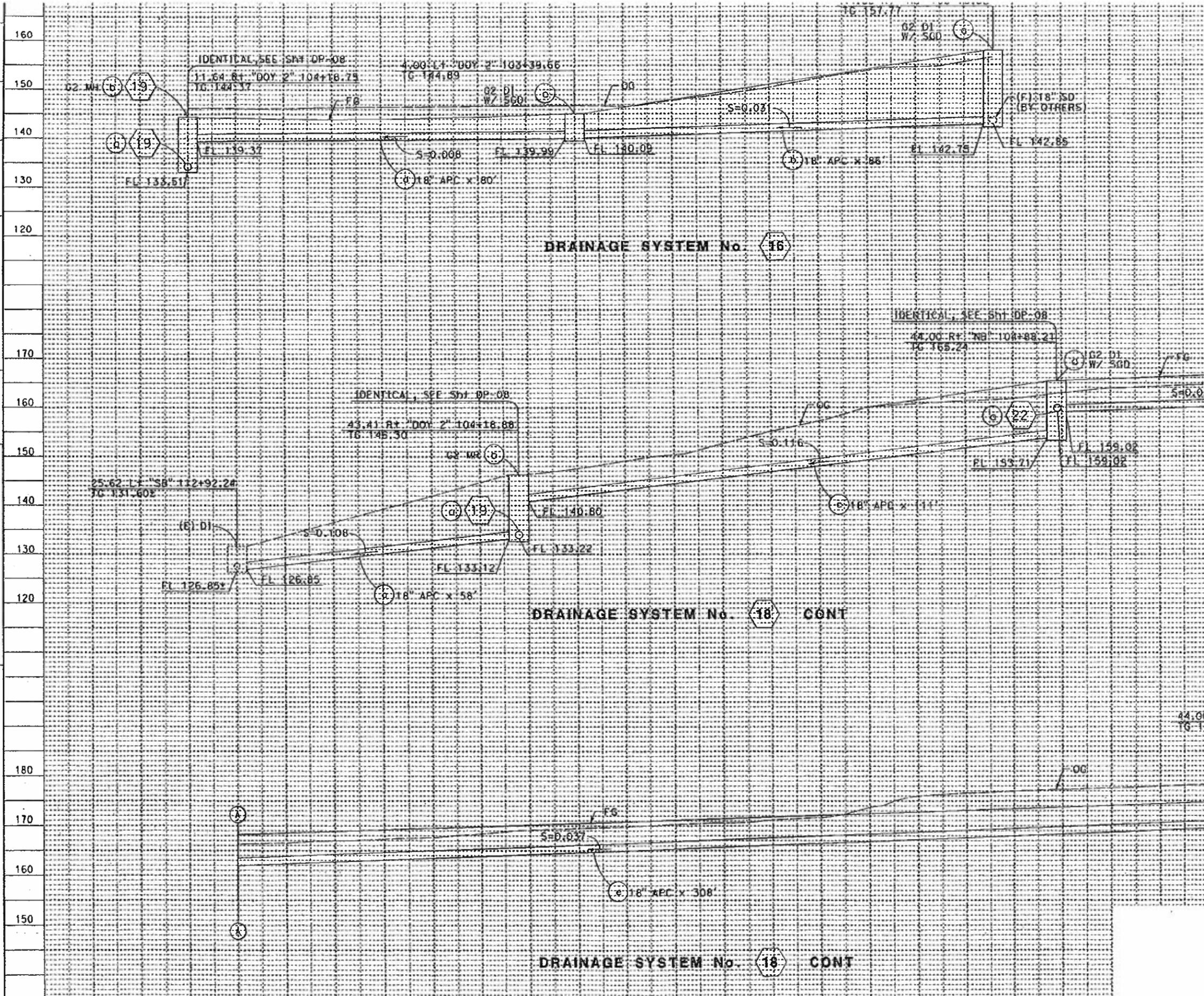
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 SCALE: 1"=10'
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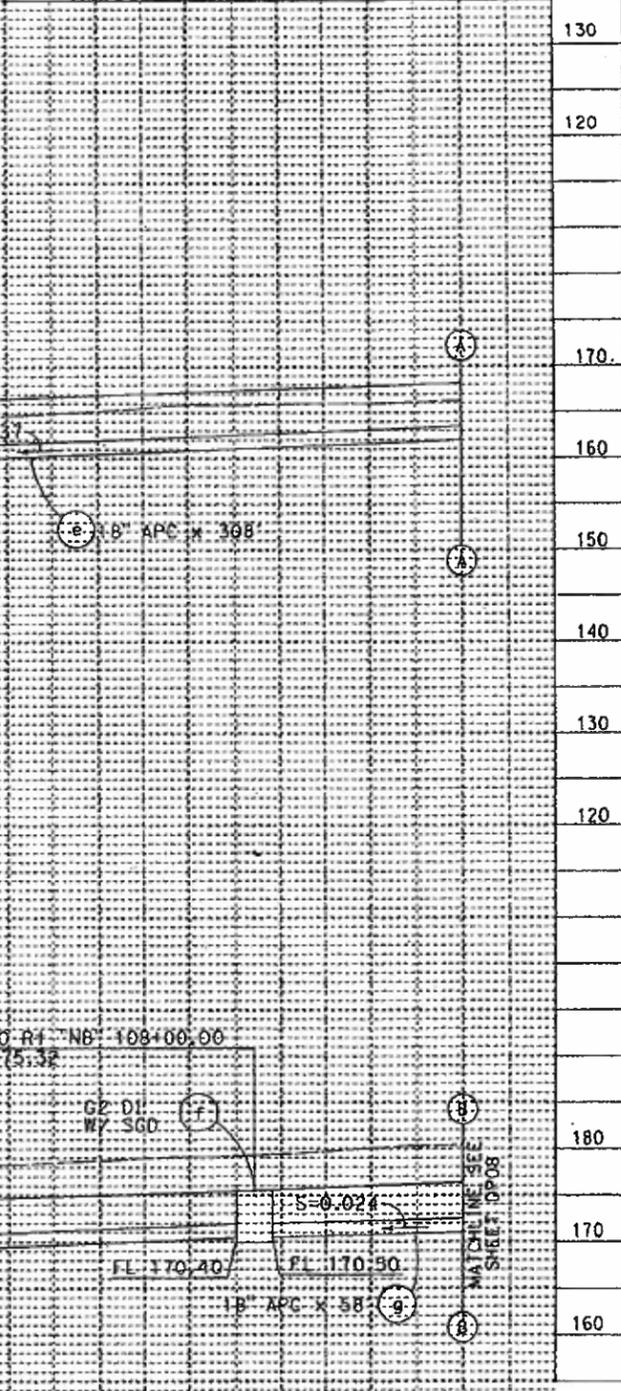
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 No. 0000
 Exp. DATE
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DRAINAGE PROFILE
 SCALE: 1"=10'

DP-07

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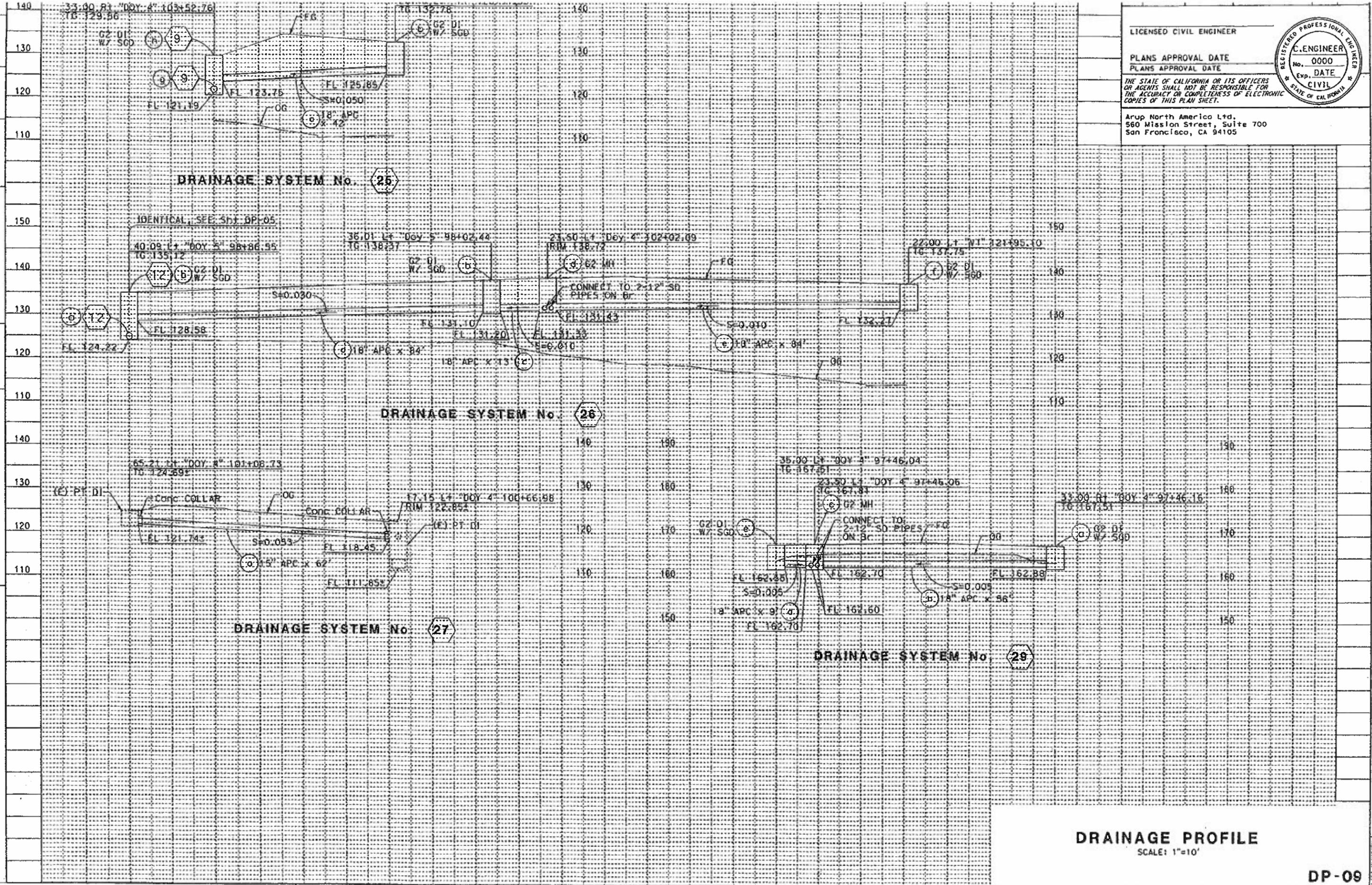
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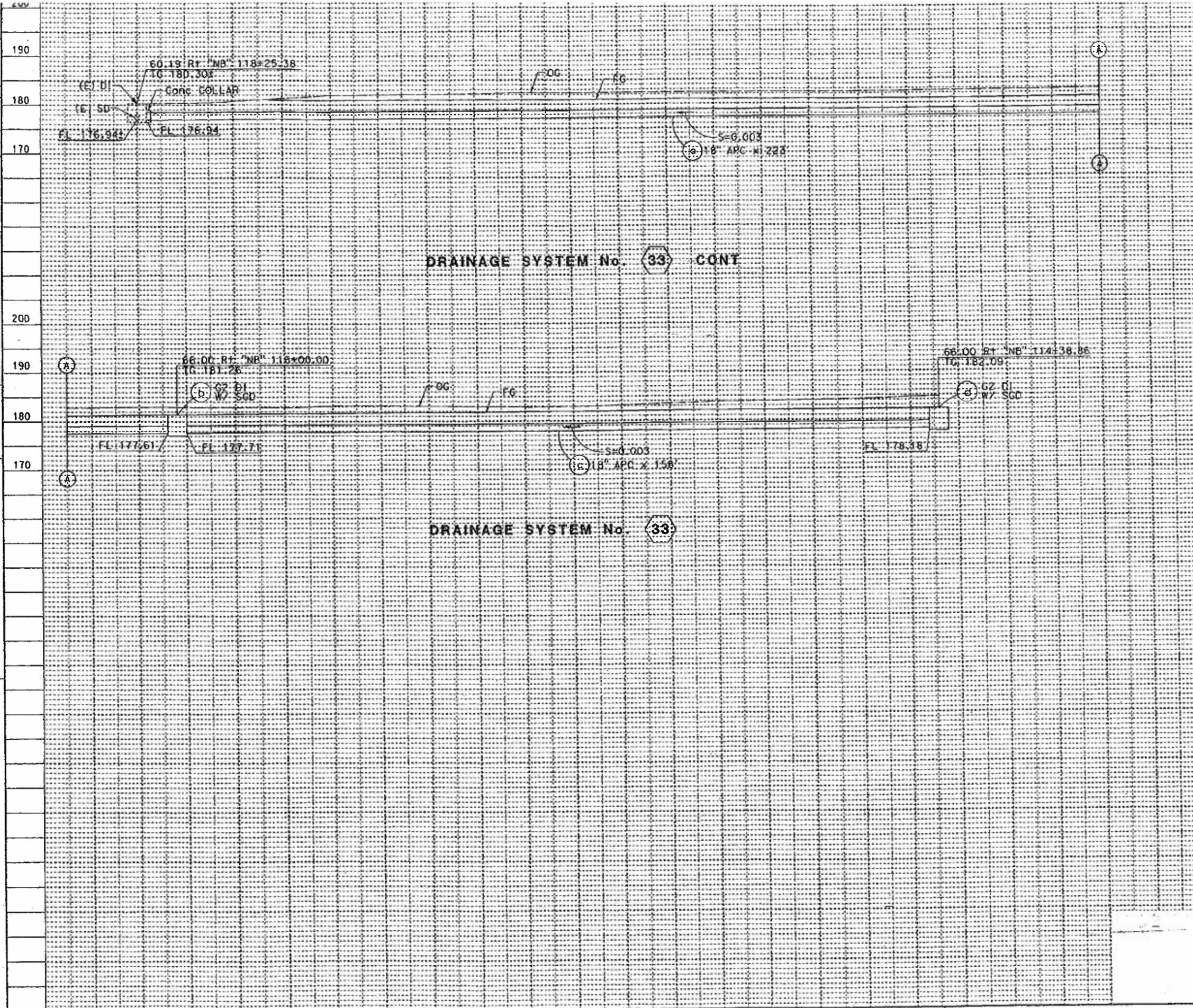
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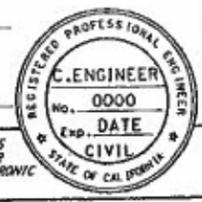
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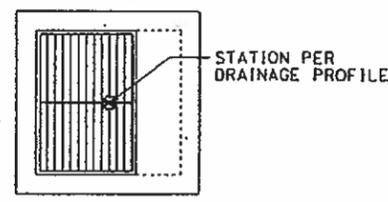
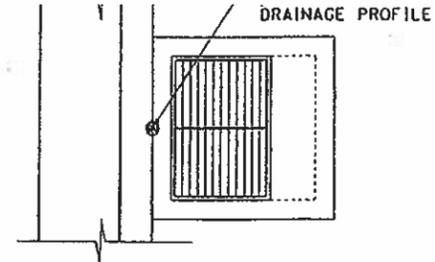
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170	Arup North America Ltd. 560 Mission Street, Suite 700 San Francisco, CA 94105



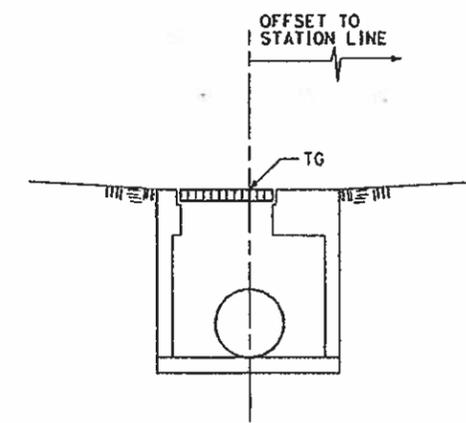
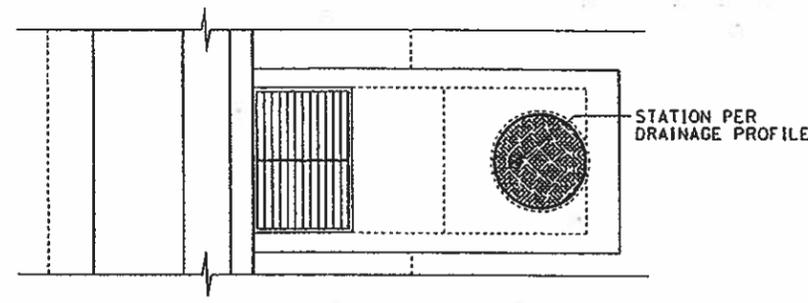
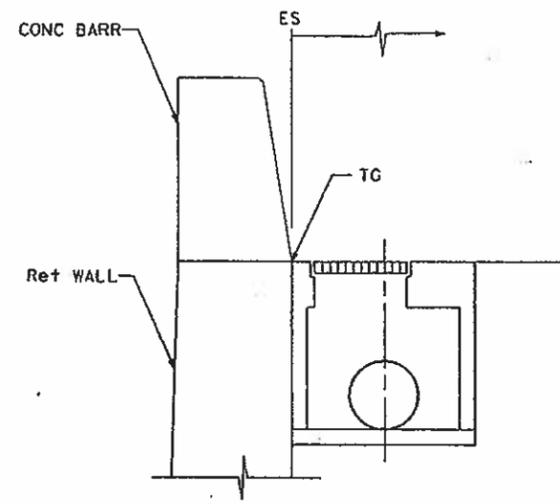
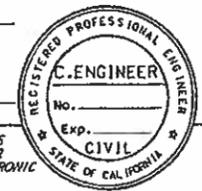
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SCALE: 1"=10'

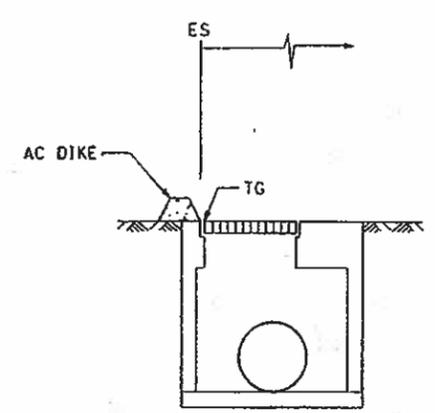
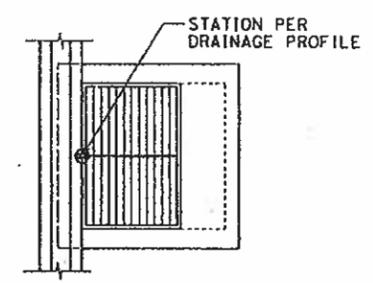
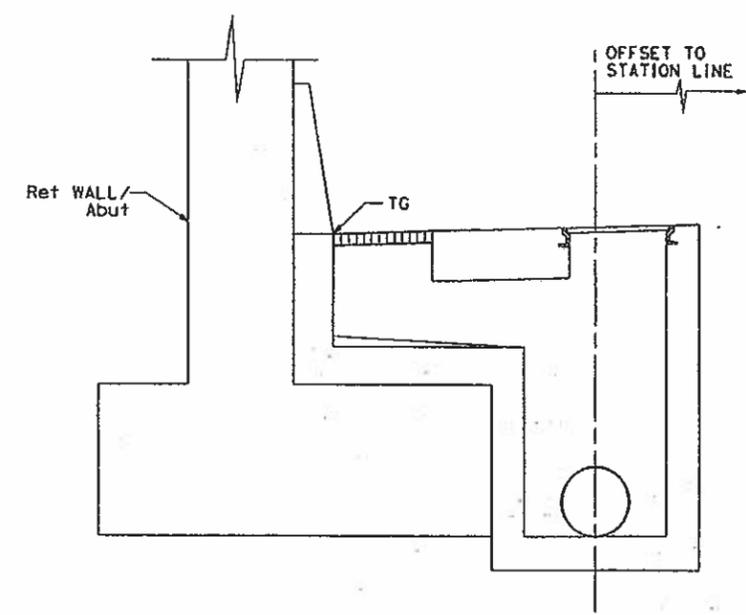
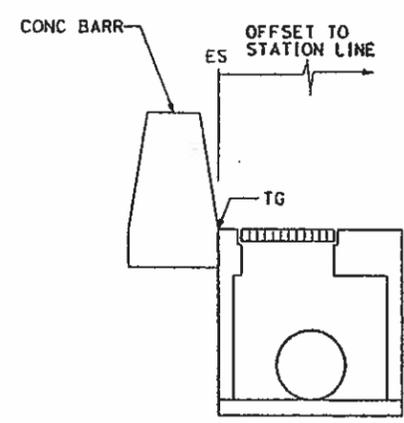
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FIELD INLET



INLET ADJACENT TO AC DIKE

INLET ADJACENT TO TOP RETAINING WALL OR CONCRETE BARRIER

INLET ADJACENT TO BOTTOM RETAINING WALL OR BRIDGE ABUTMENT

DRAINAGE DETAILS
 NO SCALE

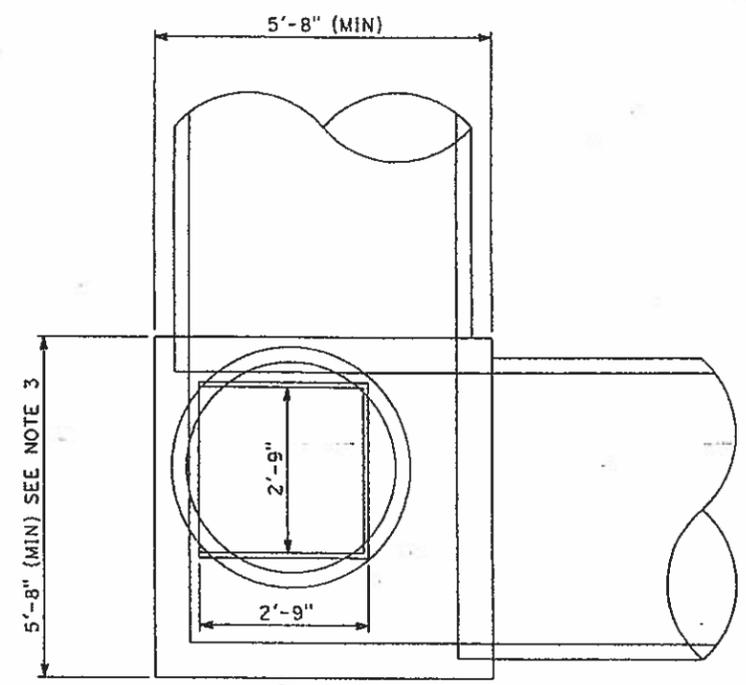
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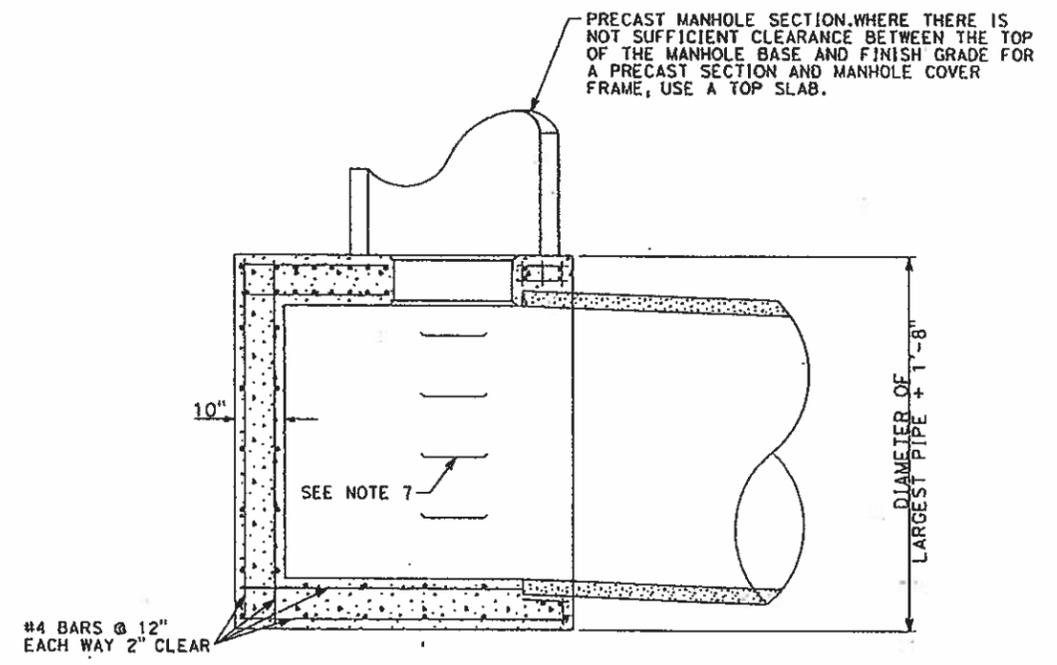
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STATE OF CALIFORNIA
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PLAN



SECTION A-A

BOTTOM SLAB TO BE IN PLACE PRIOR TO CONSTRUCTION OF PIPE WHERE CAST-IN-PLACE IS USED.

NOTES:

1. ALL REINFORCED CONCRETE SHALL BE CLASS 2 (590 LBS. PCC PER CUBIC YARD).
2. CONSTRUCTION JOINTS ARE OPTIONAL WHERE SHOWN. OTHER LOCATIONS ARE SUBJECT TO APPROVAL BY THE PUBLIC WORKS DEPARTMENT. KEY DIMENSIONS ARE 1 1/2" X 3 1/2"

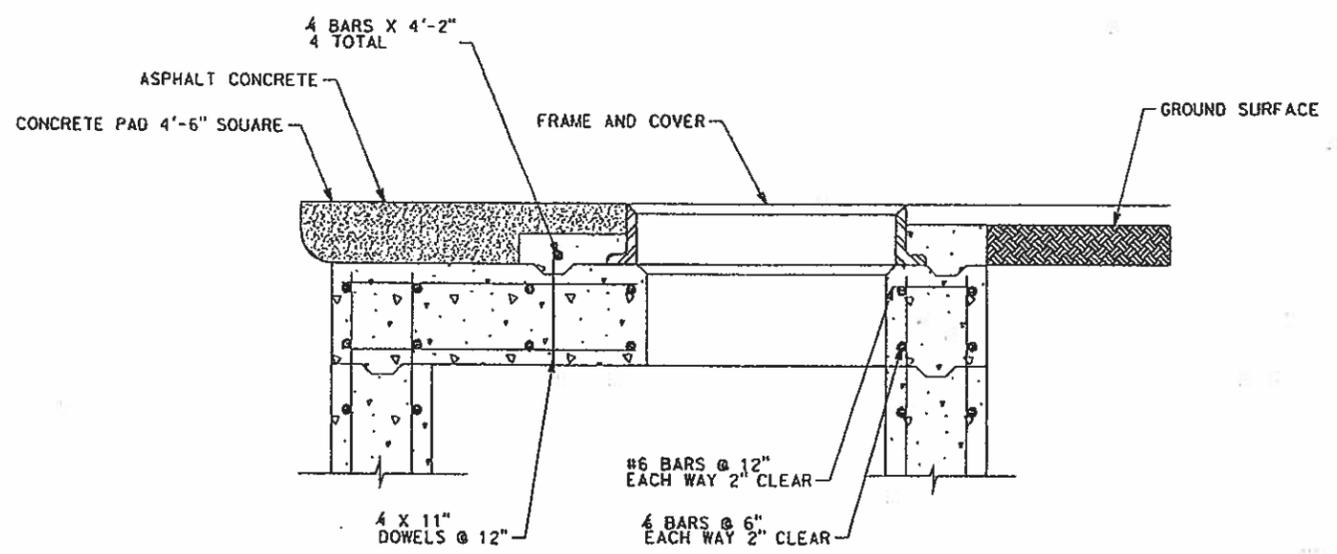
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TOP SLAB

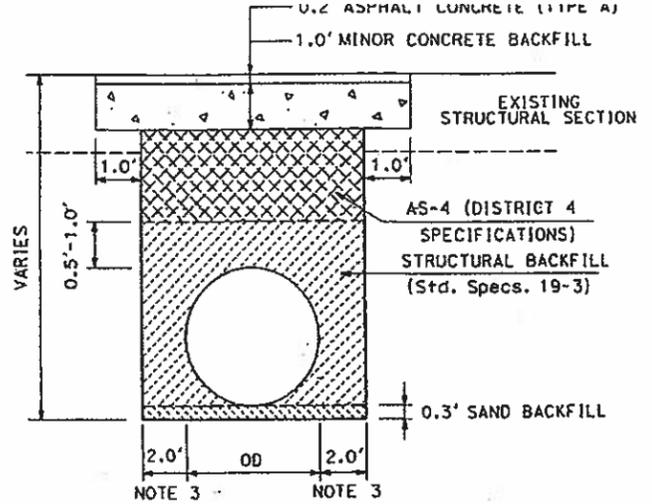
STORM DRAIN MANHOLE (TYPE I)

7 0 C E G I

DRAINAGE DETAILS

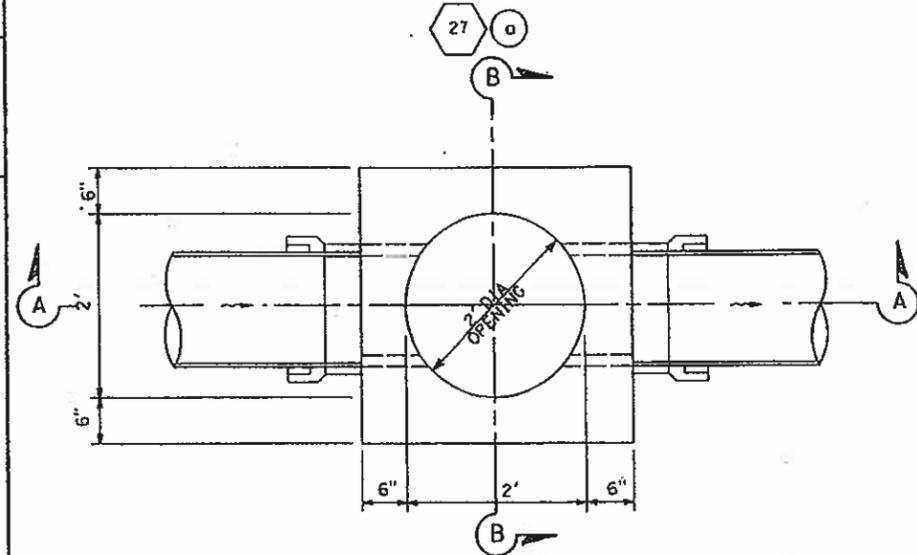
NO SCALE

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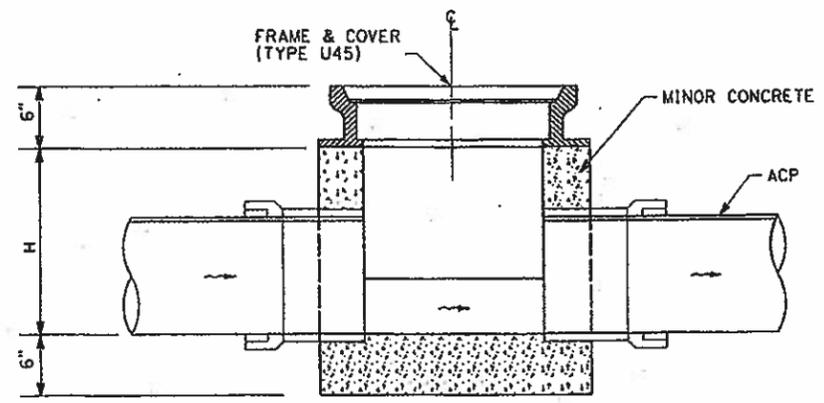


- NOTES:
1. COMPACTION TO BE AT 95% RELATIVE COMPACTION.
 2. CONCRETE CAP SHALL BE "RAPID SET" PCC.
 3. IF SLURRY CEMENT BACKFILL IS USED, 0.5' FOR PIPES UP TO 42", OR 1' FOR PIPES OR PIPES OVER 42" DIAMETER.

TRENCH PAVING DETAIL
(FOR LOCAL STREETS ONLY)



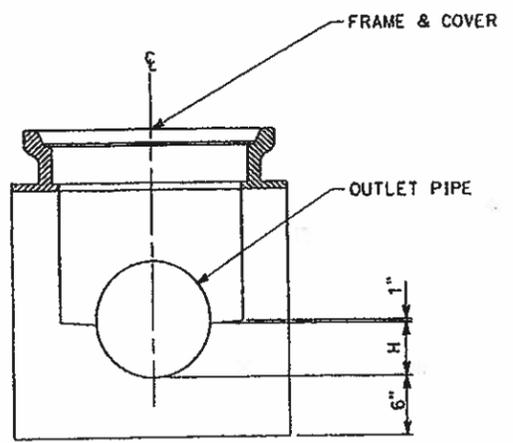
PLAN
(MANHOLE FRAME COVER NOT SHOWN)



SECTION A-A

NOTES:

1. MAXIMUM DIAMETER OR PIPE CONNECTING TO THIS MANHOLE IS 12".
2. "H" IS THE DIFFERENCE IN ELEVATION BETWEEN THE OUTLET PIPE FLOW LINE AND THE BOTTOM OF MANHOLE FRAME.
3. PIPE DIAMETER + 6" <= H <= 27".
4. "H" IS 1/2 DIAMETER OF THE OUTLET PIPE.
5. MANHOLE WALL/BOTTOM REINFORCING IS NOT REQUIRED.
6. PIPE(S) CAN BE PLACED IN ANY WALL.
7. CAST-IN-PLACE OR PRECAST ALTERNATIVE IS OPTIONAL WITH CONTRACTOR.



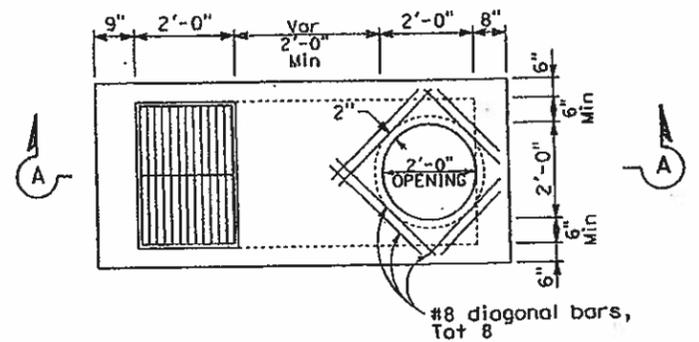
SECTION B-B

STORM DRAIN MANHOLE (TYPE II)

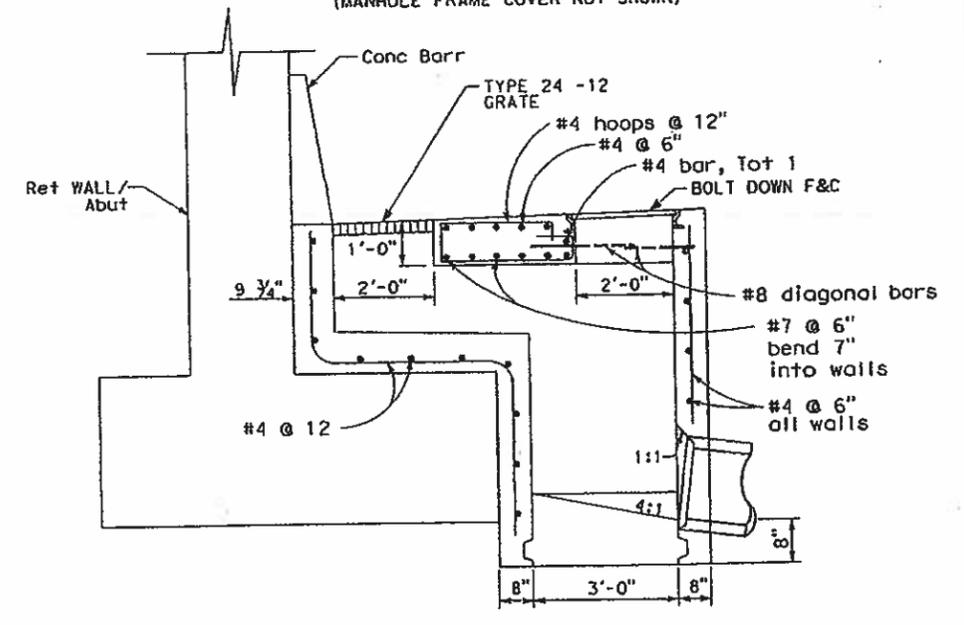
1 h 2 b 3 q 4 b 5 b

DIST.	COUNTY	ROUTE	POST MILE
LICENSED CIVIL ENGINEER			
PLANS APPROVAL DATE			
PLANS APPROVAL DATE			
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Arup PB JV 560 Mission Street, Suite 700 San Francisco, CA 94105			

REGISTERED PROFESSIONAL ENGINEER
C. ENGINEER
No. 0000
Exp. DATE
CIVIL
STATE OF CALIFORNIA



PLAN
(MANHOLE FRAME COVER NOT SHOWN)



SECTION A-A

NOTES:

1. FOR DETAILS NOT SHOWN, SEE G2 TYPE INLET ON Std PLAN D73.
2. FOR FRAME AND COVER, SEE Std PLAN B7-11 DETAIL U45.

G2 INLET Mod

19 f 20 f

DRAINAGE DETAILS
NO SCALE

REVISED BY
DATE REVISED

CALCULATED-DESIGNED BY
CHECKED BY

FUNCTIONAL SUPERVISOR

DEPARTMENT OF TRANSPORTATION

STATE OF CALIFORNIA - **Caltrans**

STATION
CY Exc
Emb

PRELIMINARY PLANS
SUBJECT TO REVISION

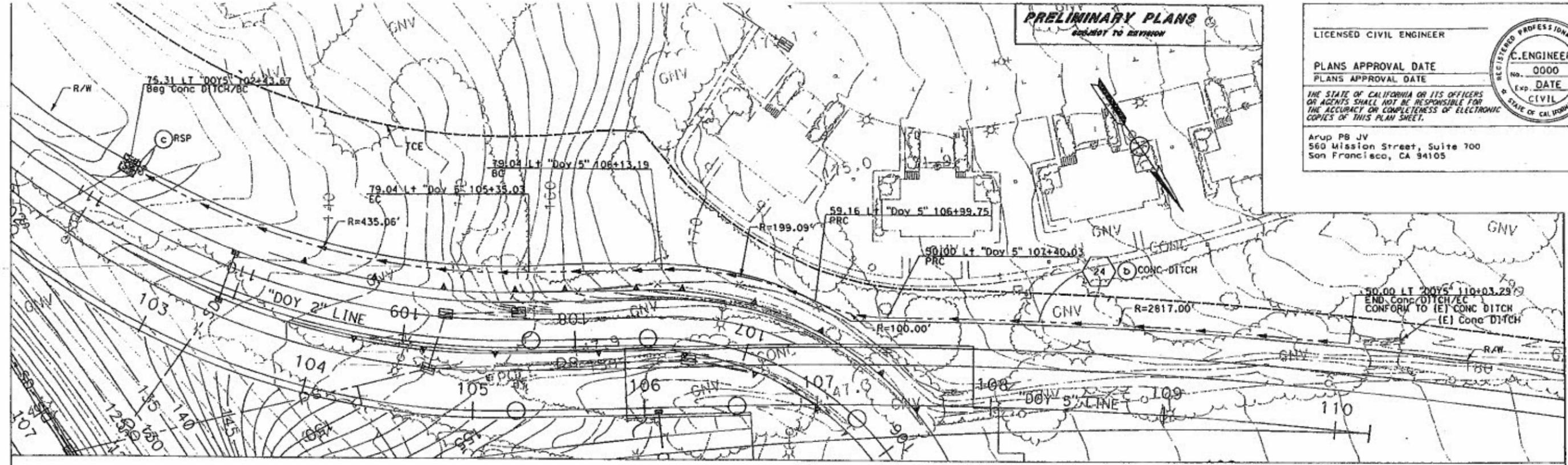
LICENSED CIVIL ENGINEER



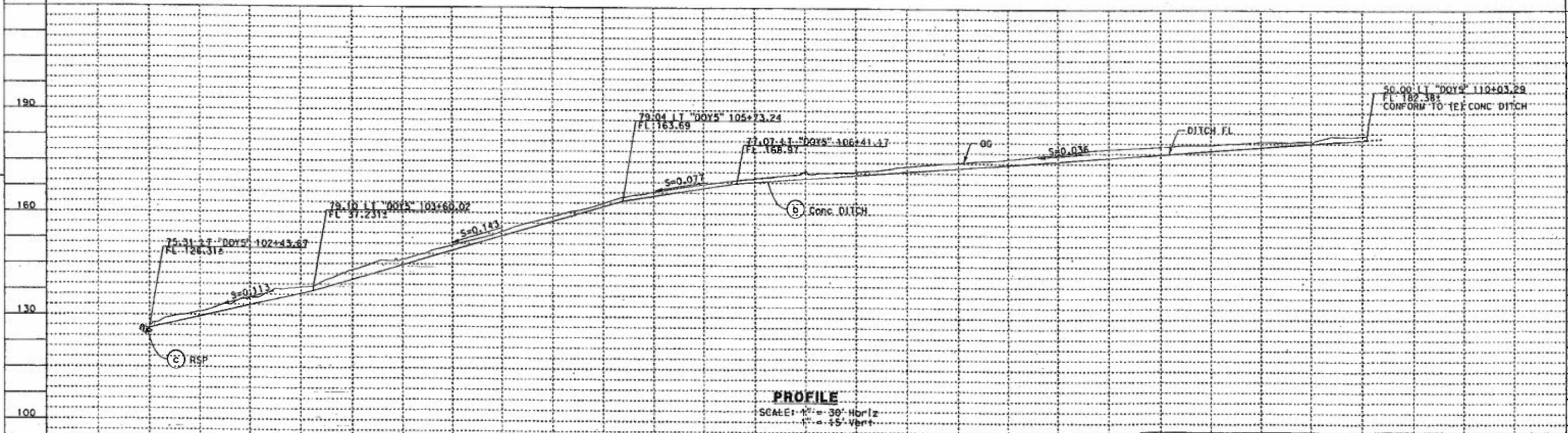
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Arup PB JV
560 Mission Street, Suite 700
San Francisco, CA 94105



PLAN
SCALE: 1" = 30'



PROFILE
SCALE: 1" = 30' Horiz
1" = 15' Vert

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY

DRAINAGE DETAILS
AS SHOWN

DD-5

Checklist SW-2, Storm Water Quality Issues Summary

Prepared by: _____	Date: _____	District-Co-Route: _____
PM (KP): _____	EA: _____	
RWQCB: _____		

The following questions provide a guide to collecting critical information relevant to project stormwater quality issues. Complete responses to applicable questions, consulting other Caltrans functional units (Environmental, Landscape Architecture, Maintenance, etc.) and the District/Regional Storm Water Coordinator as necessary. Summarize pertinent responses in Section 2 of the SWDR.

- | | | |
|--|--|--|
| 1. Determine the receiving waters that may be affected by the project throughout the project life cycle (i.e., construction, maintenance and operation). | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA |
| 2. For the project limits, list the 303(d) impaired receiving water bodies and their constituents of concern. | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA |
| 3. Determine if there are any municipal or domestic water supply reservoirs or groundwater percolation facilities within the project limits. Consider appropriate spill contamination and spill prevention control measures for these new areas. | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA |
| 4. Determine the RWQCB special requirements, including TMDLs, effluent limits, etc. | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA |
| 5. Determine regulatory agencies seasonal construction and construction exclusion dates or restrictions required by federal, state, or local agencies. | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA |
| 6. Determine if a 401 certification will be required. | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA |
| 7. List rainy season dates. | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA |
| 8. Determine the general climate of the project area. Identify annual rainfall and rainfall intensity curves. | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA |
| 9. If considering Treatment BMPs, determine the soil classification, permeability, erodibility, and depth to groundwater. | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA |
| 10. Determine contaminated or hazardous soils within the project area. | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA |
| 11. Determine the total disturbed soil area of the project. | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA |
| 12. Describe the topography of the project site. | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA |
| 13. List any areas outside of the Caltrans right-of-way that will be included in the project (e.g. contractor's staging yard, work from barges, easements for staging, etc.). | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA |
| 14. Determine if additional right-of-way acquisition or easements and right-of-entry will be required for design, construction and maintenance of BMPs. If so, how much? | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA |
| 15. Determine if a right-of-way certification is required. | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA |
| 16. Determine the estimated unit costs for right-of-way should it be needed for Treatment BMPs, stabilized conveyance systems, lay-back slopes, or interception ditches. | <input type="checkbox"/> Complete | <input checked="" type="checkbox"/> NA |
| 17. Determine if project area has any slope stabilization concerns. | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA |
| 18. Describe the local land use within the project area and adjacent areas. | <input checked="" type="checkbox"/> Complete | <input type="checkbox"/> NA |
| 19. Evaluate the presence of dry weather flow. | <input type="checkbox"/> Complete | <input checked="" type="checkbox"/> NA |

Design Pollution Prevention BMPs		
Checklist DPP-1, Part 1		
Prepared by: _____	Date: _____	District-Co-Route: _____
PM (KP): _____	EA: _____	
RWQCB: _____		

Consideration of Design Pollution Prevention BMPs

1. Consideration of Downstream Effects Related to Potentially Increased Flow [to streams or channels]?

- (a) Will project increase velocity or volume of downstream flow? Yes No NA
- (b) Will the project discharge to unlined channels? Yes No NA
- (c) Will project increase potential sediment load of downstream flow? Yes No NA
- (d) Will project encroach, cross, realign, or cause other hydraulic changes to a stream that may affect downstream channel stability? Yes No NA

If Yes was answered to any of the above questions, consider **Downstream Effects Related to Potentially Increased Flow**, complete the DPP-1, Part 2 checklist.

2. Slope/Surface Protection Systems

- (a) Will project create new slopes or modify existing slopes? Yes No NA

If Yes was answered to the above question, consider **Slope/Surface Protection Systems**, complete the DPP-1, Part 3 checklist.

3. Concentrated Flow Conveyance Systems

- (a) Will the project create or modify ditches, dikes, berms, or swales? Yes No NA
- (b) Will project create new slopes or modify existing slopes? Yes No NA
- (c) Will it be necessary to direct or intercept surface runoff? Yes No NA
- (d) Will cross drains be modified? Yes No NA

If Yes was answered to any of the above questions, consider **Concentrated Flow Conveyance Systems**; complete the DPP-1, Part 4 checklist.

4. Preservation of Existing Vegetation

- a) It is the goal of the Storm Water Program to maximize the protection of desirable existing vegetation to provide erosion and sediment control benefits on all projects. Complete

Consider **Preservation of Existing Vegetation**, complete the DPP-1, Part 5 checklist.

Design Pollution Prevention BMPs

Checklist DPP-1, Part 2

Prepared by: _____	Date: _____	District-Co-Route: _____
PM (KP): _____	EA: _____	
RWQCB: _____		

Downstream Effects Related to Potentially Increased Flow

1. Review total paved area and reduce to the maximum extent practicable. Complete
2. Review channel lining materials and design for stream bank erosion control. Complete
 - (a) See Chapters 860 and 870 of the HDM. Complete
 - (b) Consider channel erosion control measures within the project limits as well as downstream. Consider scour velocity. Complete
3. Include, where appropriate, energy dissipation devices at culvert outlets. Complete
4. Ensure all transitions between culvert outlets/headwalls/wingwalls and channels are smooth to reduce turbulence and scour. Complete
5. Include, if appropriate, peak flow attenuation basins to reduce peak discharges. Complete

Design Pollution Prevention BMPs		
Checklist DPP-1, Part 3		
Prepared by: _____	Date: _____	District-Co-Route: _____
PM (KP): _____	EA: _____	
RWQCB: _____		

Slope / Surface Protection Systems

1. What are the proposed areas of cut and fill? (attach plan or map) Complete

2. Were benches or terraces provided on high cut and fill slopes to reduce concentration of flows? Yes No

3. Were slopes rounded and/or shaped to reduce concentrated flow? Yes No

4. Were concentrated flows collected in stabilized drains or channels? Yes No

5. Are slopes > 1:4 vertical:horizontal (V:H)? Yes No
 If Yes, District Landscape Architecture must prepare or approve an erosion control plan.

6. Are slopes > 1:2 (V:H)? Yes No
 If Yes, Geotechnical Services must prepare a Geotechnical Design Report, and the District Landscape Architect should prepare or approve an erosion control plan. Concurrence must be obtained from the District Maintenance Storm Water Coordinator for slopes steeper than 1:2 (V:H).

7. Estimate the change to the impervious areas that will result from this project. Complete
8 acres

VEGETATED SURFACES

1. Identify existing vegetation. Complete

2. Evaluate site to determine soil types, appropriate vegetation and planting strategies. Complete

3. How long will it take for permanent vegetation to establish? Complete

4. Minimize overland and concentrated flow depths and velocities. Complete

HARD SURFACES

1. Are hard surfaces required? Yes No
 If Yes, document purpose (safety, maintenance, soil stabilization, etc.), types, and general locations of the installations. Complete

Review appropriate SSPs for Vegetated Surface and Hard Surface Protection Systems. Complete

**Design Pollution Prevention BMPs
Checklist DPP-1, Part 4**

Prepared by: _____	Date: _____	District-Co-Route: _____
PM (KP): _____	EA: _____	
RWQCB: _____		

Concentrated Flow Conveyance Systems

Ditches, Berms, Dikes and Swales

1. Consider Ditches, Berms, Dikes, and Swales as per Chapters 813, 836, and 860 of the HDM. Complete
2. Evaluate risks due to erosion, overtopping, flow backups or washout. Complete
3. Consider outlet protection where localized scour is anticipated. Complete
4. Examine the site for run-on from off-site sources. Complete
5. Consider channel lining when velocities exceed scour velocity for soil. Complete

Overside Drains

1. Consider downdrains, as per Index 834.4 of the HDM. Complete
2. Consider paved spillways for side slopes flatter than 1:4 V:H. Complete

Flared Culvert End Sections

1. Consider flared end sections on culvert inlets and outlets as per Chapter 827 of the HDM. Complete

Outlet Protection/Velocity Dissipation Devices

1. Consider outlet protection/velocity dissipation devices at outlets, including cross drains, as per Chapters 827 and 870 of the HDM. Complete

Review appropriate SSPs for Concentrated Flow Conveyance Systems. Complete

Design Pollution Prevention BMPs

Checklist DPP-1, Part 5

Prepared by: _____	Date: _____	District-Co-Route: _____
PM (KP): _____	EA: _____	
RWQCB: _____		

Preservation of Existing Vegetation

1. Review Preservation of Property, Standard Specifications 16.1.01 and 16-1.02 (Clearing and Grubbing) to reduce clearing and grubbing and maximize preservation of existing vegetation. Complete
2. Has all vegetation to be retained been coordinated with Environmental, and identified and defined in the contract plans? Yes No
3. Have steps been taken to minimize disturbed areas, such as locating temporary roadways to avoid stands of trees and shrubs and to follow existing contours to reduce cutting and filling? Complete
4. Have impacts to preserved vegetation been considered while work is occurring in disturbed areas? Yes No
5. Are all areas to be preserved delineated on the plans? Yes No

Treatment BMPs		
Checklist T-1, Part 1		
Prepared by: _____	Date: _____	District-Co-Route: _____
PM (KP): _____	EA: _____	
RWQCB: _____		

Consideration of Treatment BMPs

This checklist is used for projects that require the consideration of Approved Treatment BMPs; as determined from the process described in Section 4 (Project Treatment Consideration) and the Evaluation Documentation Form (EDF). This checklist will be used to determine which Treatment BMPs should be considered for each watershed and sub-watersheds within the project. Supplemental data will be needed to verify siting and design applicability for final incorporation into a project.

Complete this checklist for each phase of the project, when considering Treatment BMPs. Use the responses to the questions as the basis when developing the narrative in Section 5 of the Storm Water Data Report to document that Treatment BMPs have been appropriately considered.

Answer all questions, unless otherwise directed.

1. Dry Weather Flow Diversion

- (a) Are dry weather flows generated by Caltrans anticipated to be persistent? Yes No
- (b) Is a sanitary sewer located on or near the site? Yes No
- (c) Is the connection to the sanitary sewer possible without extraordinary plumbing, features or construction practices? Yes No
- (d) Is the domestic wastewater treatment authority willing to accept flow? Yes No

If Yes was answered to all of these questions consider Dry Weather Flow Diversion, complete and attach Part 3 of this checklist

- 2. Is the receiving water on the 303(d) list for litter/trash or has a TMDL been issued for litter/trash? Yes No

If Yes, consider Gross Solids Removal Devices (GSRDs), complete and attach Part 6 of this checklist. Note: Biofiltration Systems, Infiltration Devices, Detention Devices, Media Filters, MCTTs, and Wet Basins also can capture litter – consult with District/Regional NPDES if these devices should be considered to meet litter/trash TMDL.

- 3. Is project located in an area (e.g., mountain regions) where traction sand is applied more than twice a year? Yes No
If Yes, consider *Traction Sand Traps*, complete and attach Part 7 of this checklist.

- 4. (a) Are there local influent limits for infiltration or Basin Plan restrictions or other local agency prohibitions that would restrict the use of the infiltration devices? Yes No

Checklist T-1, Part 1

(b) Would infiltration pose a threat to local groundwater quality as determined by the District/Regional Storm Water Coordinator? Yes No

If the answer to either part of Question 4 is Yes, then Infiltration Devices are infeasible and the consideration of Infiltration Devices should not be made when completing Questions 5 through 17.

5. (a) Does the project discharge to any 303(d) listed water body? Yes No
If No, go to Question 17, General Purpose Pollutant Removal

(b) If Yes, is the identified pollutant(s) considered a Targeted Design Constituent (TDC) (check all that apply):

phosphorus, nitrogen, total copper, dissolved copper,
 total lead dissolved lead, total zinc, dissolved zinc,
 sediments, general metals [unspecified metals].

(c) If only one TDC is checked above, continue to Question 6. Complete

(d) If more than one TDC is checked, contact your District/Regional NPDES Coordinator to determine priority before continuing with this checklist. Complete

6. Consult with the District/Regional Storm Water Coordinator to determine whether Treatment BMP selection will be affected by any existing or future TMDL requirements. Complete

The following questions show the approved Treatment BMPs in order of preference based on load reduction (performance) for the listed constituent and lifetime costs for the device, excluding right-of-way. Note that a line separates Treatment BMPs into groups of approximately equal effectiveness and within each grouping, any of the Treatment BMPs may be selected for placement if meeting site conditions. In the space provided next to the BMP, use Yes or a check mark to indicate a positive response.

If none of the listed Treatment BMPs for a specific constituent of concern (TDC) can be sited, go to Step #17 (General Purpose Pollutant Removal) to determine whether another Treatment BMP can be incorporated into the project.

For the SWDRs developed for the PID and PA/ED phases of a project: Consider all approved Treatment BMPs listed that can be reasonably incorporated into the project for each TDC.

For the SWDR developed for the PS&E phase: Indicate (Yes or check mark) only those BMPs that will be incorporated into the project.

7. Is phosphorus the TDC? [Use this constituent if "eutrophic" or "nutrients" is the TDC for the water body.] If Yes, consider: Yes No

Infiltration Devices
 Austin Sand Filters

Checklist T-1, Part 1

8. Is nitrogen the TDC? If Yes, consider: Yes No

- Infiltration Devices
- Austin Sand Filters
- Delaware Filter
- Detention Device
- MCTT

9. Is copper (total) the TDC? If Yes for total Copper, consider: Yes No

- Infiltration Devices
- Wet Basins
- Biofiltration Strips
- Detention Device
- Biofiltration Swales
- Austin Sand Filter
- Delaware Filter
- MCTT

10. Is copper (dissolved) the TDC? If Yes for dissolved Copper, consider: Yes No

- Infiltration Devices
- Biofiltration Strips
- Wet Basin
- Biofiltration Swale

11. Is lead (total) the TDC? If Yes for total Lead, consider: Yes No

- Infiltration Devices
- Wet Basin
- Biofiltration Strips
- Austin Sand Filter
- Delaware Filter
- Detention Device
- Biofiltration Swales
- MCTT

12. Is lead (dissolved) the TDC? If Yes for dissolved Lead, consider: Yes No

- Infiltration Devices
- Biofiltration Strips
- Wet Basin
- Detention Device
- Biofiltration Swales
- Austin Sand Filter

13. Is zinc (total) the TDC? If Yes for total Zinc, consider: Yes No

- Infiltration Devices
- Delaware Filter
- Wet Basin
- Biofiltration Strips
- Biofiltration Swales
- Austin Sand Filter
- MCTT
- Detention Devices

Checklist T-1, Part 1

14. Is zinc (dissolved) the TDC? If Yes for dissolved Zinc, consider: Yes No

- Infiltration Devices
- Delaware Filter
- Biofiltration Strip
- Biofiltration Swale
- Austin Sand Filter
- MCTT

15. Is sediment (total suspended solids [TSS]) the TDC? If Yes for TSS, consider: Yes No

- Infiltration Devices
- Austin Sand Filter
- Delaware Filter
- Wet Basin
- Detention Device
- Biofiltration Strip
- MCTT
- Biofiltration Swale

16. Are "General Metals" or (unspecified) "Metals" the TDC? If Yes for General Metals, consider: Yes No

- Infiltration Devices
- Biofiltration Strips
- Wet Basin
- Biofiltration Swale
- Austin Sand Filter
- Delaware Filter
- MCTT

17. General Purpose Pollutant Removal.: When it is determined that there are no TDCs, consider the Treatment BMPs in the order listed below. Yes No

- Infiltration Devices
- Biofiltration Strips
- Wet Basin
- Biofiltration Swale
- Austin Sand Filter
- Detention Device
- Delaware Filter
- MCTT

18. Biofiltration Yes No
(a) Are site conditions and climate favorable to allow suitable vegetation to be established?

(b) Have Biofiltration strips and swales been considered to the extent practicable? Note: Biofiltration BMPs should be considered for all projects, even if other Treatment BMPs are placed. Yes No

If No to (a) or (b), document justification in Section 5 of the SWDR.

Checklist T-1, Part 1

19. After completing the above, complete and attach the checklists shown below for every Treatment BMP under consideration Complete

- Biofiltration Strips and Biofiltration Swales: Checklist T-1, Part 2
- Dry Weather Diversion: Checklist T-1, Part 3
- Infiltration Devices: Checklist T-1, Part 4
- Detention Devices: Checklist T-1, Part 5
- GSRDs: Checklist T-1, Part 6
- Traction Sand Traps: Checklist T-1, Part 7
- Media Filter [Austin Sand Filter and Delaware Filter]: Checklist T-1, Part 8
- Multi-Chambered Treatment Train: Checklist T-1, Part 9
- Wet Basins: Checklist T-1, Part 10

20. (a) Estimate what percentage of WQV/WQF will be treated by the preferred Treatment BMP(s): _____% Complete

(b) Have Treatment BMPs been considered for use in parallel or series to increase this percentage? Yes No

21. Prepare cost estimate, including right-of-way, for selected Treatment BMPs and include as supplemental information for SWDR approval. Complete

Treatment BMPs		
Checklist T-1, Part 2		
Prepared by: _____	Date: _____	District-Co-Route: _____
PM (KP): _____	EA: _____	
RWQCB: _____		

Biofiltration Swales / Biofiltration Strips

Feasibility

1. Do the climate and site conditions allow vegetation to be established? Yes No
 2. Are flow velocities < 4 fps (i.e. low enough to prevent scour of the vegetated bioswale as per HDM Table 873.3E)? Yes No
- If No to either question above, Biofiltration Swales and Biofiltration Strips are not feasible.
3. Are Biofiltration Swales proposed at sites where known hazardous soils or contaminated groundwater plumes exist? Yes No
If Yes, consult with District/Regional NPDES Coordinator about how to proceed.
 4. Does adequate area exist within the right-of-way to place biofiltration device(s)? Yes No
If Yes, continue to the Design Elements section. If No, continue to Question 5.
 5. If adequate area does not exist within right-of-way, can suitable, additional right-of-way be acquired to site Biofiltration Devices and how much right-of way would be needed to treat WQF? _____ acres Yes No
If Yes, continue to Design Elements section. If No, continue to Question 6.
 6. If adequate area cannot be obtained, document in Section 5 of the SWDR that the inability to obtain adequate area prevents the incorporation of these Treatment BMPs into the project. Complete

Design Elements

* **Required Design Element** – A “Yes” response to these questions is required to further the consideration of this BMP into the project design. Document a “No” response in Section 5 of the SWDR to describe why this Treatment BMP cannot be included into the project design.

** **Recommended Design Element** – A “Yes” response is preferred for these questions, but not required for incorporation into a project design.

1. Has the District Landscape Architect provided vegetation mixes appropriate for climate and location? * Yes No

Checklist T-1, Part 2

2. Can the bioswale be designed as a conveyance system under any expected flows > the WQF event, as per HDM Chapter 800? * (e.g. freeboard, minimum slope, etc.) Yes No

3. Can the bioswale be designed as a water quality treatment device under the WQF while meeting the required HRT, depth, and velocity criteria? (Reference Appendix B, Section B.2.3.1)* Yes No

4. Is the maximum length of a biostrip \leq 300 ft? * Yes No

5. Has the minimum width (in the direction of flow) of the invert of the bioswale received the concurrence of Maintenance? * Yes No

6. Can bioswales be located in natural or low cut sections to reduce maintenance problems caused by animals burrowing through the berm of the swale? ** Yes No

7. Is the biostrip sized as long as possible in the direction of flow? ** Yes No

8. Have Biofiltration Systems been considered for locations upstream of other Treatment BMPs, as part of a treatment train? ** Yes No

Construction Site BMPs		
Checklist CS-1, Part 1		
Prepared by: _____	Date: _____	District-Co-Route: _____
PM (KP): _____	EA: _____	
RWQCB: _____		

Soil Stabilization

General Parameters

1. How many rainy seasons are anticipated between beginning and end of construction? 2
2. What is the total disturbed soil area for the project? (ac) 5
 - (a) How much of the project DSA consists of slopes 1V:4H or flatter? (ac) _____
 - (b) How much of the project DSA consists of 1V:4H < slopes < 1V:2H? (ac) _____
 - (c) How much of the project DSA consists of slopes 1V:2H and steeper? (ac) _____
 - (d) How much of the project DSA consists of slopes with slope lengths longer than 20 ft? (ac) _____
3. What rainfall area does the project lie within? (Refer to Table 2-1 of the Construction Site Best Management Practices Manual) Northern and Central
4. Review the required combination of temporary soil stabilization and temporary sediment controls and barriers for area, slope inclinations, rainy and non-rainy season, and active and non-active disturbed soil areas. (Refer to Tables 2-2, and 2-3 of the Construction Site Best Management Practices Manual for Rainfall Area requirements.) Complete

Scheduling (SS-1)

5. Does the project have a duration of more than one rainy season and have disturbed soil area in excess of 25 acres? Yes No
 - (a) Include multiple mobilizations (Move-in/Move-out) as a separate contract bid line item to implement permanent erosion control or revegetation work on slopes that are substantially complete. (Estimate at least 6 mobilizations for each additional rainy season. Designated Construction Representative may suggest an alternate number of mobilizations.) Complete
 - (b) Edit Order of Work specifications for permanent erosion control or revegetation work to be implemented on slopes that are substantially complete. Complete
 - (c) Edit permanent erosion control or revegetation specifications to require seeding and planting work to be performed when optimal. Complete

Checklist CS-1, Part 1

Preservation of Existing Vegetation (SS-2)

6. Do Environmentally Sensitive Areas (ESAs) exist within or adjacent to the project limits? (Verify the completion of DPP-1, Part 5) Yes No
- (a) Verify the protection of ESAs through delineation on all project plans. Complete
- (b) Protect from clearing and grubbing and other construction disturbance by enclosing the ESA perimeter with high visibility plastic fence or other BMP. Complete
7. Are there areas of existing vegetation (mature trees, native vegetation, landscape planting, etc.) that need not be disturbed by project construction? Will areas designated for proposed treatment BMPs need protection (infiltration characteristics, vegetative cover, etc.)? (Coordinate with District Environmental and Construction to determine limits of work necessary to preserve existing vegetation to the maximum extent practicable.) Yes No
- (a) Designate as outside of limits of work (or designate as ESAs) and show on all project plans. Complete
- (b) Protect with high visibility plastic fence or other BMP. Complete
8. If yes for 6, 7, or both, then designate ESA fencing as a separate contract bid line item, if not already incorporated as part of design pollution prevention work (See DPP-1, Part 5). Complete

Slope Protection

9. Provide a soil stabilization BMP(s) appropriate for the DSA, slope steepness, slope length, and soil erodibility. (Consult with District/Regional Landscape Architect.)
- (a) Select SS-3 (Hydraulic Mulch), SS-4 (Hydroseeding), SS-5 (Soil Binders), SS-6 (Straw Mulch), SS-7 (Geotextiles, RECPs, Etc.), SS-8 (Wood Mulching), other BMPs or a combination to cover the DSA throughout the project's rainy season. Complete
- (b) Increase the quantities by 25% for each additional rainy season. (Designated Construction Representative may suggest an alternate increase.) Complete
- (c) Designate as a separate contract bid line item. Complete

Slope Interrupter Devices

10. Provide slope interrupter devices for all slopes with slope lengths equal to or greater than of 20 ft in length. (Consult with District/Regional Landscape Architect and Designated Construction Representative.)
- (a) Select SC-5 (Fiber Rolls) or other BMPs to protect slopes throughout the project's rainy season. Complete
 - (b) For slope inclination of 1V:4H and flatter, SC-5 (Fiber Rolls) or other BMPs shall be placed along the contour and spaced 20 ft on center. Complete
 - (c) For slope inclination between 1V:4H and 1V:2H, SC-5 (Fiber Rolls) or other BMPs shall be placed along the contour and spaced 15 ft on center. Complete
 - (d) For slope inclination of 1V:2H and greater, SC-5 (Fiber Rolls) or other BMPs shall be placed along the contour and spaced 10 ft on center. Complete
 - (e) Increase the quantities by 25% for each additional rainy season. (Designated Construction Representative may suggest alternate increase.) Complete
 - (f) Designate as a separate contract bid line item. Complete

Channelized Flow

11. Identify locations within the project site where concentrated flow from stormwater runoff can erode areas of soil disturbance. Identify locations of concentrated flow that enters the site from outside of the right-of-way (off-site run-on). Complete
- (a) Utilize SS-7 (Geotextiles, RECPs, etc.), SS-9 (Earth Dikes/Swales, Ditches), SS-10 (Outlet Protection/Velocity Dissipation), SS-11 (Slope Drains), SC-4 (Check Dams), or other BMPs to convey concentrated flows in a non-erosive manner. Complete
 - (b) Designate as a separate contract bid line item. Complete

Construction Site BMPs		
Checklist CS-1, Part 2		
Prepared by: _____	Date: _____	District-Co-Route: _____
PM (KP): _____	EA: _____	
RWQCB: _____		

Sediment Control

Perimeter Controls - Run-off Control

1. Is there a potential for sediment laden sheet and concentrated flows to discharge offsite from runoff cleared and grubbed areas, below cut slopes, embankment slopes, etc.? Yes No
 - (a) Select linear sediment barrier such as SC-1 (Silt Fence), SC-5 (Fiber Rolls), SC-6 (Gravel Bag Berm), SC-8 (Sand Bag Barrier), SC-9 (Straw Bale Barrier), or a combination to protect wetlands, water courses, roads (paved and unpaved), construction activities, and adjacent properties. (Coordinate with District Construction for selection and preference of linear sediment barrier BMPs.) Complete
 - (b) Increase the quantities by 25% for each additional rainy season. (Designated Construction Representative may suggest an alternate increase.) Complete
 - (c) Designate as a separate contract bid line item. Complete

Perimeter Controls - Run-on Control

2. Do locations exist where sheet flow upslope of the project site and where concentrated flow upstream of the project site may contact DSA and construction activities? Yes No
 - (a) Utilize linear sediment barriers such as SS-9 (Earth Dike/Drainage Swales and Lined Ditches), SC-5 (Fiber Rolls), SC-6 (Gravel Bag Berm), SC-8 (Sand Bag Barrier), SC-9 (Straw Bale Barrier), or other BMPs to convey flows through and/or around the project site. (Coordinate with District Construction for selection and preference of perimeter control BMPs.) Complete
 - (b) Designate as a separate contract bid line item. Complete

Storm Drain Inlets

3. Do existing or proposed drainage inlets exist within the project limits? Yes No
- (a) Select SC-10 (Storm Drain Inlet Protection) to protect municipal storm drain systems or receiving waters wetlands at each drainage inlet. (Coordinate with District Construction for selection and preference of inlet protection BMPs.) Complete
- (b) Designate as a separate contract bid line item. Complete
4. Can existing or proposed drainage inlets utilize an excavated sediment trap as described in SC-10 (Storm Drain Inlet Protection- Type 2)? Yes No
- (a) Include with other types of SC-10 (Storm Drain Inlet Protection). Complete

Sediment/Desilting Basin (SC-2)

5. Does the project lie within a Rainfall Area where the required combination of temporary soil stabilization and sediment control BMPs includes desilting basins? (Refer to Tables 2-1, 2-2, and 2-3 of the Construction Site Best Management Practices Manual for Rainfall Area requirements.) Yes No
- (a) Consider feasibility for desilting basin allowing for available right-of-way within the project limits, topography, soil type, disturbed soil area within the watershed, and climate conditions. Document if the inclusion of sediment/desilting basins is infeasible. Complete
- (b) If feasible, design desilting basin(s) per the guidance in SC-2 Sediment/Desilting Basins of the Construction Site BMP Manual to maximize capture of sediment-laden runoff. Complete
- Designate as a separate contract bid item. Complete
6. Will the project benefit from the early implementation of proposed permanent Treatment BMPs? (Coordinate with District Construction.) Yes No
- (a) Edit Order of Work specifications for permanent treatment BMP work to be implemented in a manner that will allow its use as a construction site BMP. Complete

Sediment Trap (SC-3)

7. Can sediment traps be located to collect channelized runoff from disturbed soil areas prior to discharge? Yes No
- (a) Design sediment traps in accordance with the Construction Site BMP Manual. Complete
- (b) Designate as a separate contract bid line item. Complete

Construction Site BMPs		
Checklist CS-1, Part 3		
Prepared by: _____	Date: _____	District-Co-Route: _____
PM (KP): _____	EA: _____	
RWQCB: _____		

Tracking Controls

Stabilized Construction Entrance/Exit (TC-1)

1. Are there points of entrance and exit from the project site to paved roads where mud and dirt could be transported offsite by construction equipment? (Coordinate with District Construction for selection and preference of tracking control BMPs.) Yes No
 - (a) Identify and designate these entrance/exit points as stabilized construction entrances (TC-1). Complete
 - (b) Designate as a separate contract bid line item. Complete

Tire/Wheel Wash (TC-3)

2. Are site conditions anticipated that would require additional or modified tracking controls such as entrance/outlet tire wash? (Coordinate with District Construction.) Yes No

Designate as a separate contract bid line item. Complete

Stabilized Construction Roadway (TC-2)

3. Are temporary access roads necessary to access remote construction activity locations or to transport materials and equipment? (In addition to controlling dust and sediment tracking, access roads limit impact to sensitive areas by limiting ingress, and provide enhanced bearing capacity.) (Coordinate with District Construction.) Yes No
 - (a) Designate these temporary access roads as stabilized construction roadways (TC-2). Complete
 - (b) Designate as a separate contract bid line item. Complete

Street Sweeping and Vacuuming (SC-7)

4. Is there a potential for tracked sediment or construction related residues to be transported offsite and deposited on public or private roads? (Coordinate with District Construction for preference of including street sweeping and vacuuming with tracking control BMPs.) Yes No

Designate as a separate contract bid line item. Complete

Construction Site BMPs		
Checklist CS-1, Part 4		
Prepared by: _____	Date: _____	District-Co-Route: _____
PM (KP): _____	EA: _____	
RWQCB: _____		

Wind Erosion Controls

Wind Erosion Control (WE-1)

1. Is the project located in an area where standard dust control practices in accordance with Standard Specifications, Section 10: Dust Control, are anticipated to be inadequate during construction to prevent the transport of dust offsite by wind? (Note: Dust control by water truck application is paid for through the various items of work. Dust palliative, if it is included, is paid for as a separate item.) Yes No
 - (a) Select SS-3 (Hydraulic Mulch), SS-4 (Hydroseeding), SS-5 (Soil Binders), SS-7 (Geotextiles, Plastic Covers, & Erosion Control Blankets/Mats), SS-8 (Wood Mulching) or a combination to cover the DSA subject to wind erosion year-round, especially when significant wind and dry conditions are anticipated during project construction. (Coordinate with District Construction for selection and preference of wind erosion control BMPs.) Complete
 - (b) Designate as a separate contract bid line item. Complete

Construction Site BMPs		
Checklist CS-1, Part 5		
Prepared by: _____	Date: _____	District-Co-Route: _____
PM (KP): _____	EA: _____	
RWQCB: _____		

Non-Storm Water Management

Temporary Stream Crossing (NS-4) & Clear Water Diversion (NS-5)

1. Will construction activities occur within a waterbody or watercourse such as a lake, wetland, or stream? (Coordinate with District Construction for selection and preference for stream crossing and clear water diversion BMPs.) Yes No
 - (a) Select from types offered in NS-4 (Temporary Stream Crossing) to provide access through watercourses consistent with permits and agreements.¹ Complete
 - (b) Select from types offered in NS-5 (Clear Water Diversion) to divert watercourse consistent with permits and agreements.¹ Complete
 - (c) Designate as a separate contract bid line item(s). Complete

Other Non-Storm Water Management BMPs

2. Are construction activities anticipated that will generate wastes or residues with the potential to discharge pollutants? Yes No
 - (a) Identify potential pollutants associated with the anticipated construction activity and select the corresponding BMP such as NS-1 (Water Conservation Practices), NS-2 (Dewatering Operations), NS-3 (Paving and Grinding Operations), NS-7 (Potable Water/Irrigation), NS-8 (Vehicle and Equipment Cleaning), NS-9 (Vehicle and Equipment Fueling), NS-10 (Vehicle and Equipment Maintenance), NS-11 (Pile Driving Operations), NS-12 (Concrete Curing), NS-13 (Material and Equipment Use Over Water), NS-14 (Concrete Finishing), and NS-15 (Structure Demolition/Removal Over or Adjacent to Water).¹ Complete
 - (b) Verify that costs for non-storm water management BMPs are identified in the contract documents. Designate BMP as a separate contract bid line item if the requirements in Construction Site Management (SSP 07-346) are anticipated to be inadequate or if requested by Construction. Complete

¹ Coordinate with District Environmental for consistency with US Army Corps of Engineers 404 permit and Dept. of Fish and Game 1601 Streambed alteration Agreements.

Construction Site BMPs		
Checklist CS-1, Part 6		
Prepared by: _____	Date: _____	District-Co-Route: _____
PM (KP): _____	EA: _____	
RWQCB: _____		

Waste Management & Materials Pollution Control

Concrete Waste Management (WM-8)

1. Does the project include concrete pours or mortar mixing? Yes No
 - (a) Select from types offered in WM-8 (Concrete Waste Management) to provide concrete washout facilities. In addition, consider portable concrete washouts and vendor supplied concrete waste management services. (Coordinate with District Construction for selection and preference of waste management and materials pollution control BMPs.) Complete
 - (b) Designate as a separate contract bid line item if the quantity of concrete waste and washout are anticipated to exceed 5.2 yd³ or if requested by Construction. Complete

Other Waste Management and Materials Pollution Controls

2. Are construction activities anticipated that will generate wastes or residues with the potential to discharge pollutants? Yes No
 - (a) Identify potential pollutants associated with the anticipated construction activity and select the corresponding BMP such as WM-1 (Material Delivery and Storage), WM-2 (Material Use), WM-4 (Spill Prevention and Control), WM-5 (Solid Waste Management), WM-6 (Hazardous Waste Management), WM-7 (Contaminated Soil Management), WM-9 (Sanitary/Septic Waste Management) and WM-10 (Liquid Waste Management) Complete
 - (b) Verify that costs for waste management and materials pollution control BMPs are identified in the contract documents. Designate BMP as a separate contract bid line item if the requirements in Construction Site Management (SSP 07-346) are anticipated to be inadequate or if requested by Construction. Complete

Temporary Stockpiles (Soil, Materials, and Wastes)

3. Are stockpiles of soil, etc. anticipated during construction? Yes No
 - (a) Select WM-3 (Stockpile Management), SS-3 (Hydraulic Mulch), SS-4 (Hydroseeding), SS-5 (Soil Binders), SS-7 (Geotextiles, RECPs etc.), or a combination as appropriate to cover temporary stockpiles of soil, etc. Complete
 - (b) Select linear sediment barrier such as SC-1 (Silt Fence), SC-5 (Fiber Rolls), SC-6 (Gravel Bag Berm), SC-8 (Sand Bag Barrier), SC-9 (Straw Bale Barrier), or a combination to encircle temporary stockpiles of soil, etc. (Coordinate with District Construction for selection and preference of BMPs related to stockpiles.) Complete

Checklist CS-1, Part 6

- (c) Designate as a separate contract bid line item if the requirements in Construction Site management (SSP 07-346) are anticipated to be inadequate or if requested by Construction. Complete
4. Is there a potential for dust and debris from construction material (fill material, etc.) and waste (concrete, contaminated soil, etc.) stockpiles to be transported offsite by wind? Yes No
- (a) Select SS-7, temporary cover, plastic sheeting or other BMP to cover stockpiles subject to wind erosion year-round, especially when significant wind and dry conditions are anticipated during project construction. (Coordinate with District Construction for selection and preference of wind erosion control BMPs.) Complete
- (b) Designate as a separate contract bid line item. Complete