

**American River Flood Control District
Central Valley Flood Protection Board Permit Application
Mission Trunk Line Improvements, Sacramento Area Sewer District**

Staff Report

Discussion:

The Sacramento Area Sewer District (SASD) seeks to obtain an encroachment permit to perform repairs and improvements on their trunk line within the American River Floodway adjacent to the American River North Levee at River Walk Way.

The application includes work to repair the concrete pipe junctions on their trunk line near Sheriff's Training Facility. The work is to be done on existing facilities and no new above ground structures will be constructed. A temporary service line will be installed at the waterside toe of the levee and will be positioned above ground. The proposed work will not impact the integrity of the levee nor impact operations and maintenance activities of the District. The proposed work will not affect the flow capacity of the American River Floodway nor will it raise the flood water surface elevation.

Recommendation:

The General Manager recommends that the Board of Trustees endorse the permit application from SASD.

**APPLICATION FOR A CENTRAL VALLEY FLOOD PROTECTION BOARD
ENCROACHMENT PERMIT**

Application No. _____
(For Office Use Only)

1. Description of proposed work being specific to include all items that will be covered under the issued permit.

The work includes removal of existing sewer facilities, extension of sewer pipes, replacement of a sewer structure, and the rehabilitation of another sewer structure all within the floodway. All work will be conducted waterward of the flood control levees and no excavation is proposed within the SSJDD levee easement.

2. Project Location: Mission Trunk at 1000 River Walk Way County, in Section Sacramento
(N) (E)
Township: _____ (S), Range: _____ (W), M. D. B. & M.
Latitude: _____ Longitude: _____
Stream: American River, Levee: American Riv Unit 10 Designated Floodway: _____
APN: 289-0340-028-0000

3. Sacramento Area Sewer District of 10060 Goethe Road
Name of Applicant / Land Owner Address
Sacramento CA 95827 (916) 875-6663
City State Zip Code Telephone Number
clarkr@sacsewer.com
E-mail

4. Agustin Lopez of Sacramento Area Sewer District
Name of Applicant's Representative Company
Sacramento CA 95827 (916) 875-6595
City State Zip Code Telephone Number
lopeza@sacsewer.com
E-mail

5. Endorsement of the proposed project from the Local Maintaining Agency (LMA):

We, the Trustees of _____ approve this plan, subject to the following conditions:
Name of LMA

Conditions listed on back of this form Conditions Attached No Conditions

Trustee Date

Trustee Date

Trustee Date

Trustee Date

ENVIRONMENTAL ASSESSMENT QUESTIONNAIRE FOR APPLICATIONS FOR CENTRAL VALLEY FLOOD PROTECTION BOARD ENCROACHMENT PERMITS

This environmental assessment questionnaire must be completed for all Central Valley Flood Protection Board applications. Please provide an explanation where requested. Incomplete answers may result in delays in processing permit applications. Failure to complete the questionnaire may result in rejection of the application.

1. Has an environmental assessment or initial study been made or is one being made by a local or State permitting agency in accordance with the California Environmental Quality Act? Yes No
If yes, identify the Lead Agency, type of document prepared or which will be prepared, and the State Clearinghouse Number:

County of Sacramento, Notice of Exemption, Control Number PLER2019-00094

See attached document.

2. Will the project require certification, authorization or issuance of a permit by any local, State or federal environmental control agency? Yes No

List all other governmental permits or approvals necessary for this project or use, including U.S. Army Corps of Engineer' 404and Section 10 permits, State Water Quality Certification, Department of Fish and Game 1600 agreement, etc. Attach copies of all applicable permits.

3. Give the name and address of the owner of the property on which the project or use is located. Please submit a copy of your current Title Report (Grant Deed), if your proposed project includes a private residence.

SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT
10060 GOETHE RD
SACRAMENTO, CA 95827

4. Will the project or use require issuance of a variance or conditional use permit by a city or county?
 Yes No

Explain:

5. Is the project or use currently operating under an existing use permit issued by a local agency?

Yes No

Explain:

ENVIRONMENTAL ASSESSMENT QUESTIONNAIRE FOR APPLICATIONS Item 3
FOR CENTRAL VALLEY FLOOD PROTECTION BOARD ENCROACHMENT PERMITS

6. Describe all types of vegetation growing on the project site, including trees, brush, grass, etc.

Minor vegetation

7. Describe what type of wildlife or fish may use the project site or adjoining areas for habitat, food source, nesting sites, source of water, etc.

NA

8. Has the Department of Fish and Game, U.S. Fish and Wildlife Service, or National Marine Fisheries Service been consulted relative to the existence of, or impacts to, threatened or endangered species on or near the project site?

Yes No

Explain:

The work under the project does not encroach on the American River.

9. Will the project or use significantly change present uses of the project area?

Yes No

Explain:

Replacing sewer structures in kind.

10. Will the project result in changes to scenic views or existing recreational opportunities?

Yes No

Explain:

11. Will the project result in the discharge of silt or other materials into a body of water?

Yes No

Explain:

ENVIRONMENTAL ASSESSMENT QUESTIONNAIRE FOR APPLICATIONS Item 3
FOR CENTRAL VALLEY FLOOD PROTECTION BOARD ENCROACHMENT PERMITS

12. Will the project involve the application, use, or disposal of hazardous materials? Yes No

If yes, list the types of materials, proposed use, and disposal plan. Provide copies of all applicable hazardous material handling plans.

13. Will construction activities or the completed project generate significant amounts of noise?

Yes No

Explain:

SASD and its contractors will limit construction noise, dust, odor, and other possible impacts.

14. Will construction activities or the completed project generate significant amounts of dust, ash, smoke, fumes, or odors?

Yes No

Explain:

SASD and its contractors will limit construction noise, dust, odor, and other possible impacts.

15. Will the project activities or uses involve the burning of brush, trees, or construction materials, etc?

Yes No

Explain, and identify safety and air pollution control measures:

16. Will the project affect existing agricultural uses or result in the loss of existing agricultural lands?

Yes No

Explain:

ENVIRONMENTAL ASSESSMENT QUESTIONNAIRE FOR APPLICATIONS Item 3
FOR CENTRAL VALLEY FLOOD PROTECTION BOARD ENCROACHMENT PERMITS

17. Have any other projects similar to the proposed project been planned or completed in the same general area as the proposed project?

Yes No

Explain and identify any other similar projects:

18. Will the project have the potential to encourage, facilitate, or allow additional or new growth or development?

Yes No

Explain:

19. Will materials be excavated from the floodplain? Yes No If yes, please answer the remaining questions.

THE REMAINING QUESTIONS MUST ONLY BE ANSWERED IF THE ANSWER TO QUESTION NO. 19 WAS "YES". IF THE ANSWER TO QUESTION NO. 19 WAS "NO", YOU DO NOT NEED TO COMPLETE THE REMAINING QUESTIONS.

A. What is the volume of material to be excavated?

Annually NA Total Approx 300 cubic feet

B. What types of materials will be excavated?

Soil in order to remove and replace sewer pipes and structure.

C. Will the project site include processing and stockpiling of material on site?

Yes No

Explain:

Contractor has come to agreement with the Sheriffs Academy for use of areas within the old treatment plant for storing construction materials and equipment for the duration of the project. The Sacramento Regional County Sanitation District owns the property but has leased it to the County Sheriffs for its training of candidates. Excavated material to be removed on site and reused as backfill.

D. What method and equipment will be used to excavate material?

Excavators, crane, dump truck, and loader.

ENVIRONMENTAL ASSESSMENT QUESTIONNAIRE FOR APPLICATIONS Item 3
FOR CENTRAL VALLEY FLOOD PROTECTION BOARD ENCROACHMENT PERMITS

E. What is the water source for the project?

Local water agency.

F. How will waste materials wash water, debris, and sediment be disposed of?

A Sediment and Erosion Control plan has been submitted by contractor and reviewed and approved by the Sacramento County Construction Management and Inspection Division (CMID). The contractor will follow and CMID will enforce.

G. What is the proposed end land use for the project site?

Same as it is now, convey sewage flows from Sacramento's Northeast area. The sewage flows vary between 20 million gallons per day (MGD) during the dry season to 49 MGD during the rain season.

H. Has a reclamation plan been prepared for this site in accordance with the Surface Mining and Reclamation Act of 1975?

Yes No If yes, please attach a copy.

Name	Address	Zip Code
BRADFORD CHRISTOPHER C/STINE K	1104 SAND BAR CIR CARMICHAEL CA	95608
LAUESEN WILLIAM JOSEPH/RACHEL LILLIAN-BERESS	1108 SAND BAR CIR CARMICHAEL CA	95608
DREW JESSICA/KARL	1110 CANEBREAK CT CARMICHAEL CA	95608
ERIC R SIMONSON/BARBARA E SCHNEIDER REV TRUST	1114 CANEBREAK CT CARMICHAEL CA	95608
BREINKE DAVID/VALJEAN/VALJEAN/DAVID	5320 JAMIEWOOD CT CARMICHAEL CA	95608
STENGER FAMILY TRUST	5319 JAMIEWOOD CT CARMICHAEL CA	95608
MPAX LIVING TRUST	1116 MCCLAREN DR CARMICHAEL CA	95608
JUARRROS LEON JR/CLARA DEON	1120 MCCLAREN DR CARMICHAEL CA	95608
KRAFT FAMILY TRUST 2017	1126 MCCLAREN DR CARMICHAEL CA	95608
NUNLEY TROY/SUSAN LAWRENCE	1132 MCCLAREN DR CARMICHAEL CA	95608
RUB ARIK/ILANA DVORA	1138 MCCLAREN DR CARMICHAEL CA	95608
PAUL P/MARIA A TALCOTT FAMILY TRUST	1144 MCCLAREN DR CARMICHAEL CA	95608
MCKECHNIE JULIE B/DAN L	1150 MCCLAREN DR CARMICHAEL CA	95608



**RECORDING REQUESTED
WHEN RECORDED MAIL TO:**

County of Sacramento
Office of Planning and Environmental Review
827 Seventh Street, Room 225
Sacramento, CA 95814

CONTACT PERSON: Tim Hawkins
TELEPHONE: (916) 874-6141

SPACE ABOVE RESERVED FOR RECORDER'S USE

NOTICE OF EXEMPTION

Project Title:

Mission Trunk Rehabilitation Project

Control Number:

PLER2019-00094

Project Location:

Various locations throughout the Carmichael community of unincorporated Sacramento County

APN:

Various

Description of Project:

The project consists of rehabilitation of a Sacramento Area Sewer District (SASD) sewer trunk, abandonment and removal manholes from private yards, and the relocation of the manholes to nearby roadways. The project will utilize cured in place pipe to rehab deteriorating sewer pipes. Additionally, the project will also rehabilitate existing sewer facilities within Sacramento Regional County Sanitation District's plant immediately west of the William B. Pond Recreation Area in the American River Parkway.

Name of public agency approving project:

Sacramento County – ceqa@saccounty.net

Person or agency carrying out project:

Sacramento Area Sewer District
Attn: Agustin Lopez
10060 Goethe Road
Sacramento, CA 95827
lopeza@sacsewer.com

Exempt Status:

CATEGORICAL EXEMPTION - Section 15301(d), Class 1

Reasons why project is exempt:

The project consists of the restoration and rehabilitation of deteriorated sewer facilities, resulting in the continued operation of an existing facility resulting in negligible or no expansion of use beyond that previously existing and is therefore exempt from the provisions of CEQA.

[Original Signature on File]

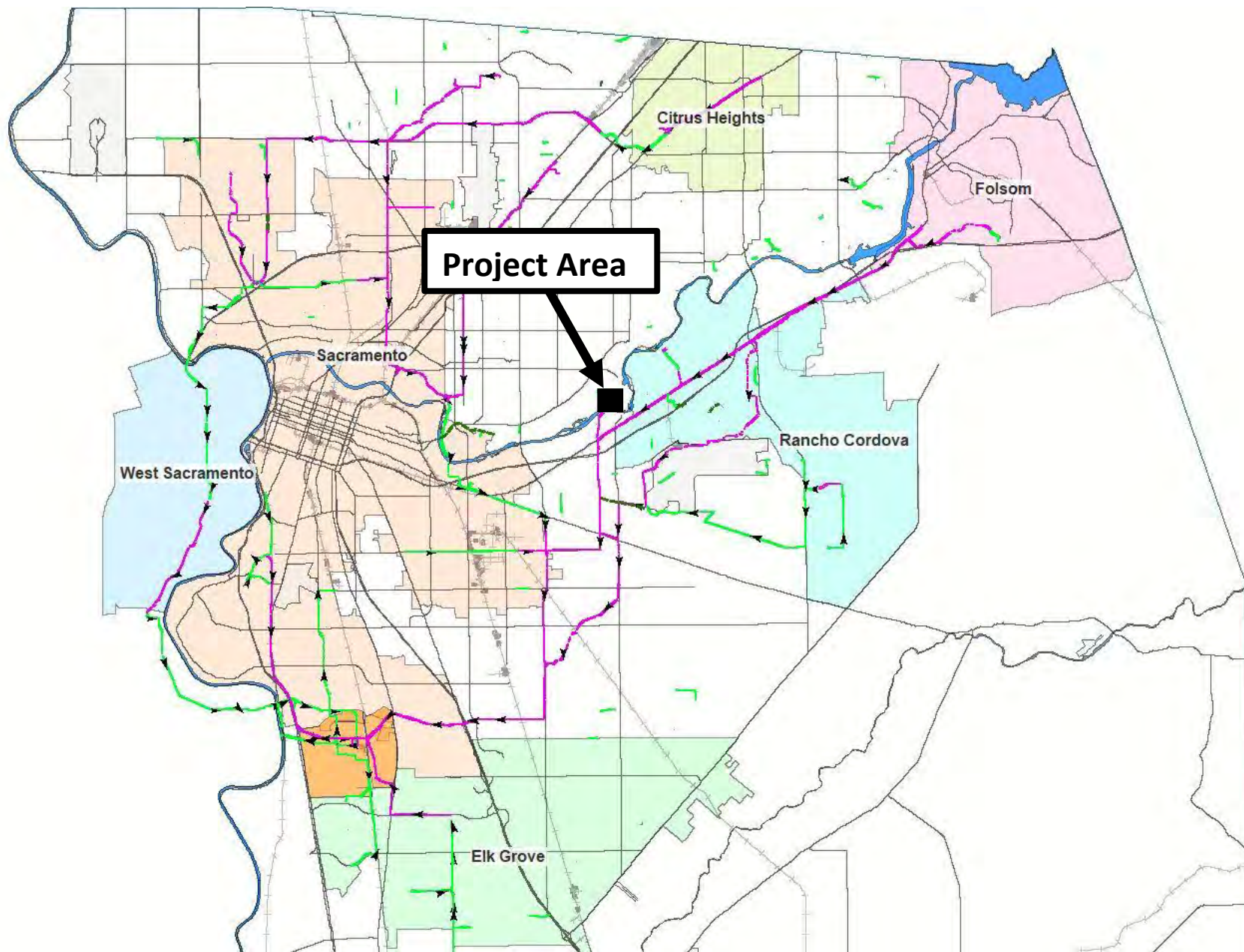
Tim Hawkins
ENVIRONMENTAL COORDINATOR OF
SACRAMENTO COUNTY, STATE OF CALIFORNIA

Copy To:

County of Sacramento
County Clerk
600 Eighth Street, Room 101
Sacramento, CA 95814

OPR:

State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814





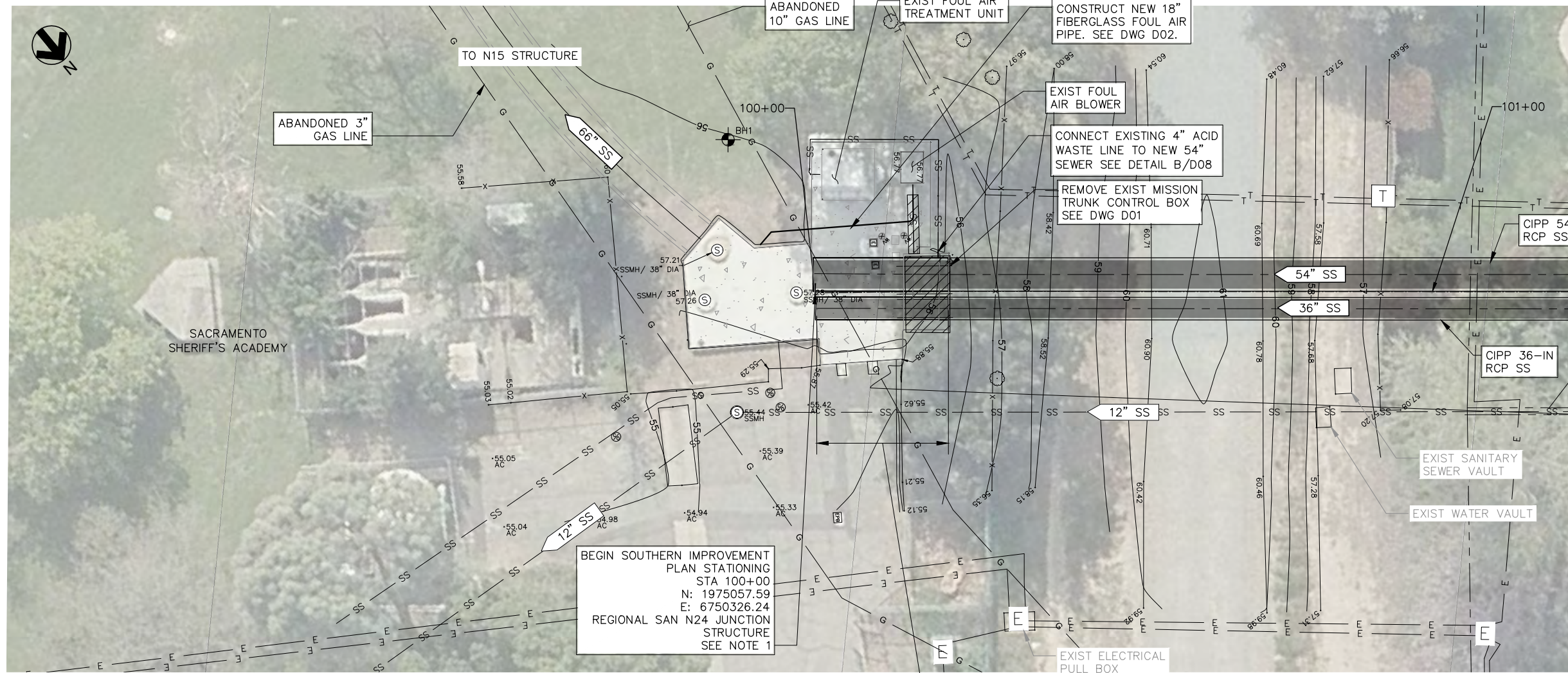
36" HDPE bypass piping along outside toe of levee (temporary).

N15

N24

Staging Area



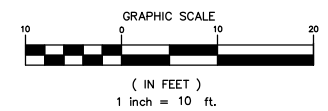


NOTES

1. SEE N15/N24 PLANS (SHTS D51 TO D65) FOR N15 AND N24 IMPROVEMENTS.
2. CONTRACTOR TO FIELD VERIFY LOCATIONS OF EXISTING MISSION TRUNK SEWER PIPELINES.
3. CUT AND REMOVE EXIST 18" FIBERGLASS FOUL AIR PIPE AT MISSION CONTROL STRUCTURE. CONNECT TO STRUCTURE N24. SEE DWG D61.
4. ELEVATIONS ON PARTIAL PLANS ARE BASED ON FIELD SURVEY CONDUCTED FOR THIS PROJECT, SEE GENERAL NOTE 35.

BEGIN SOUTHERN IMPROVEMENT
PLAN STATIONING
STA 100+00
N: 1975057.59
E: 6750326.24
REGIONAL SAN N24 JUNCTION
STRUCTURE
SEE NOTE 1

REMOVE EXIST DUAL 42-IN VCP SS AND
REPLACE WITH 54-IN AND 36-IN SS. MATCH
CROWNS AT STA 100+21. NEW RCP SS TO
MATCH EXISTING SLOPE. CIPP NEW 54-IN AND
36-IN SEWERS. SEE DWGS D01 AND D02



REVISIONS			
REV.	DESCRIPTION	BY	DATE



12/04/2019

SURVEY	
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PROFILE:	F.B.:
DATUM:	



SANITATION DISTRICTS AGENCY
SASD ENGINEERING

HydroScience
10569 OLD PLACERVILLE RD, SACRAMENTO,
CA 95827 (916)364-1490

MISSION TRUNK REHABILITATION PROJECT

**CIVIL
PARTIAL PLAN 1
MISSION TRUNK CONTROL BOX**

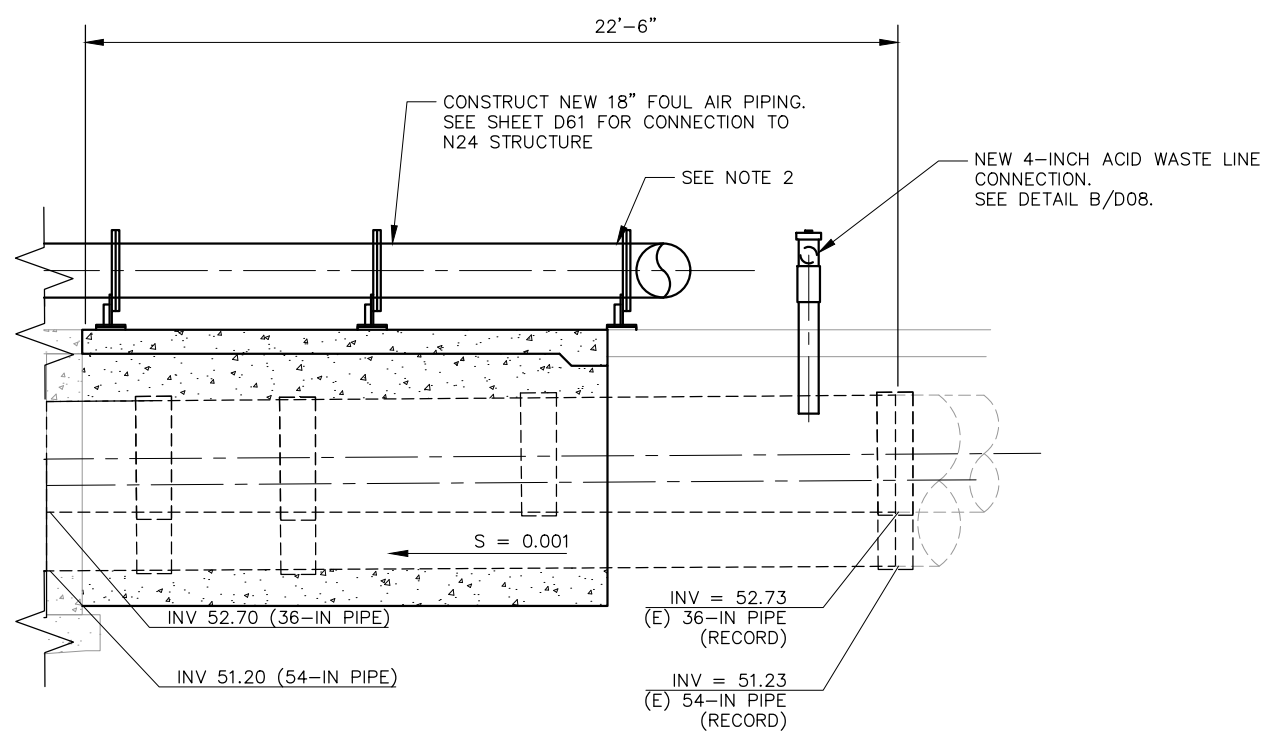
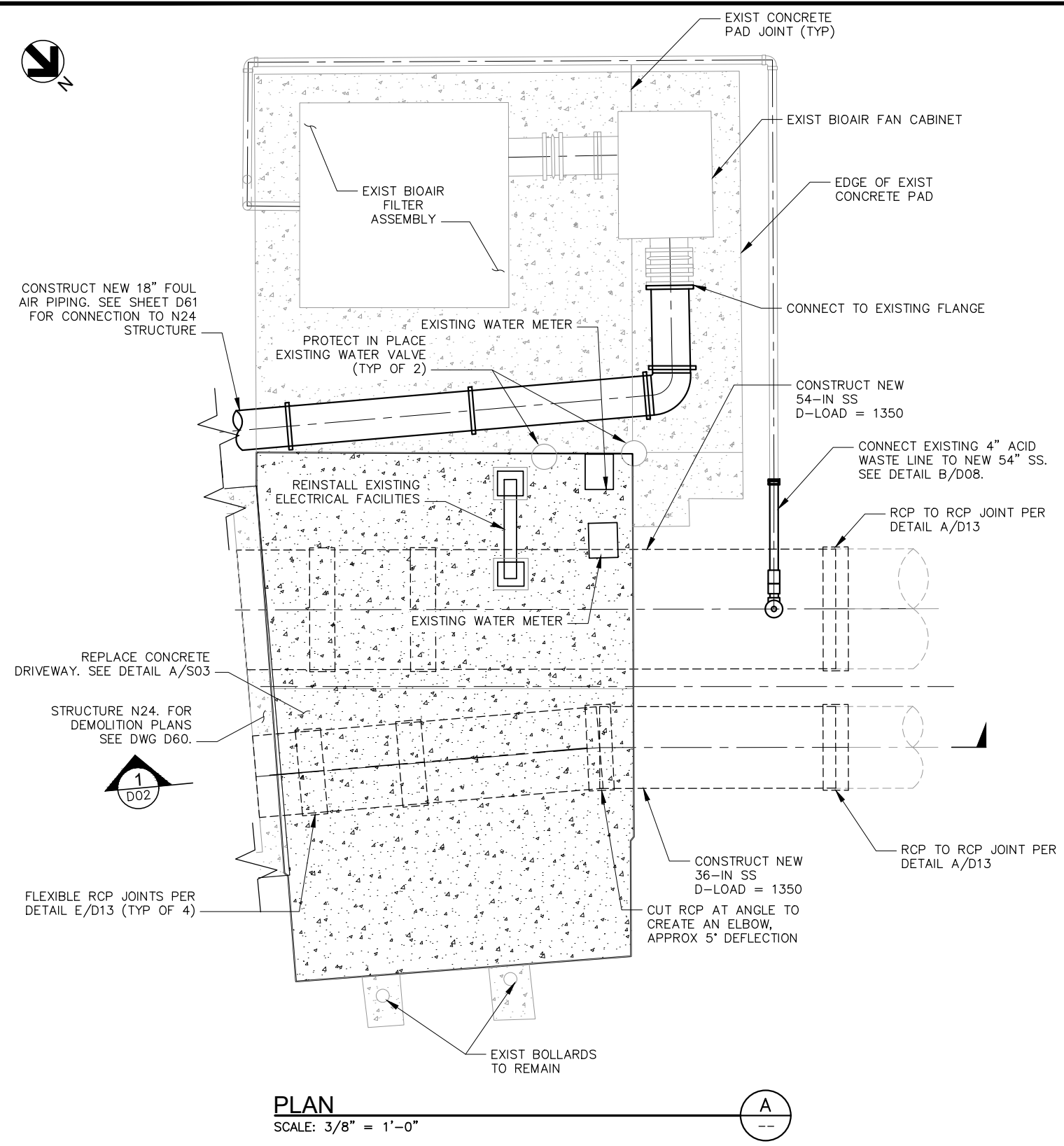
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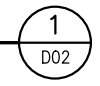
NOTES

1. ALL SEWER PIPES TO BE LINED WITH CIPP. LINERS NOT SHOWN FOR CLARITY.
2. SUPPORT FIBERGLASS PIPE WITH SUPPORTS PER DET F/D13. PROVIDE SUPPORTS AT ALL ELBOWS, AND ON STRAIGHT RUNS AT 10 FEET O.C., MAX.



SECTION

SCALE: 3/8" = 1'-0"



PLAN

SCALE: 3/8" = 1'-0"



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PROFILE:	F.B.:
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SANITATION DISTRICTS AGENCY
SASD ENGINEERING

HydroScience
10569 OLD PLACERVILLE RD, SACRAMENTO,
CA 95827 (916)364-1490

MISSION TRUNK REHABILITATION PROJECT

MISSION TRUNK CONTROL BOX IMPROVEMENTS

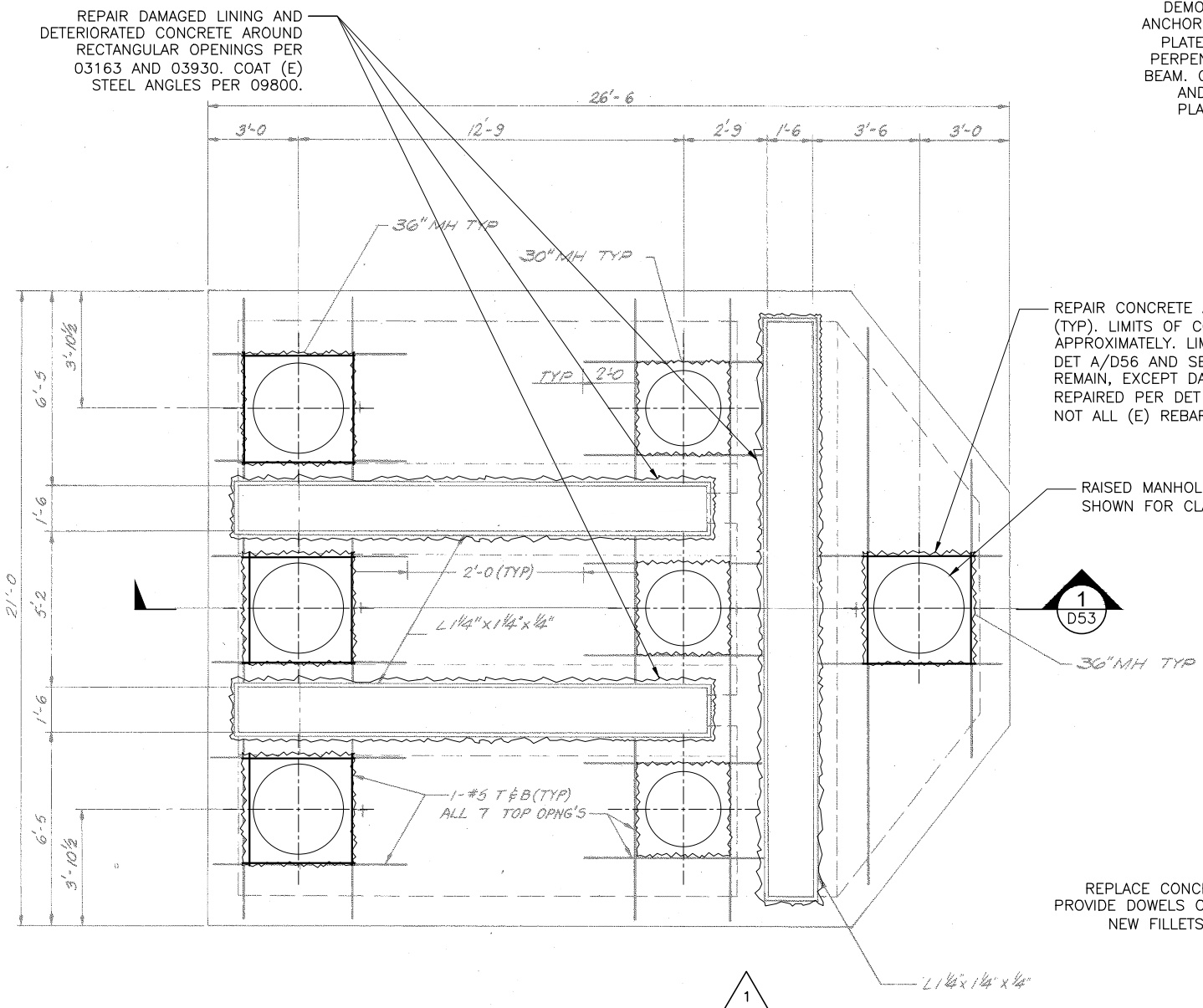
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N15 ROOF REPAIR PLAN

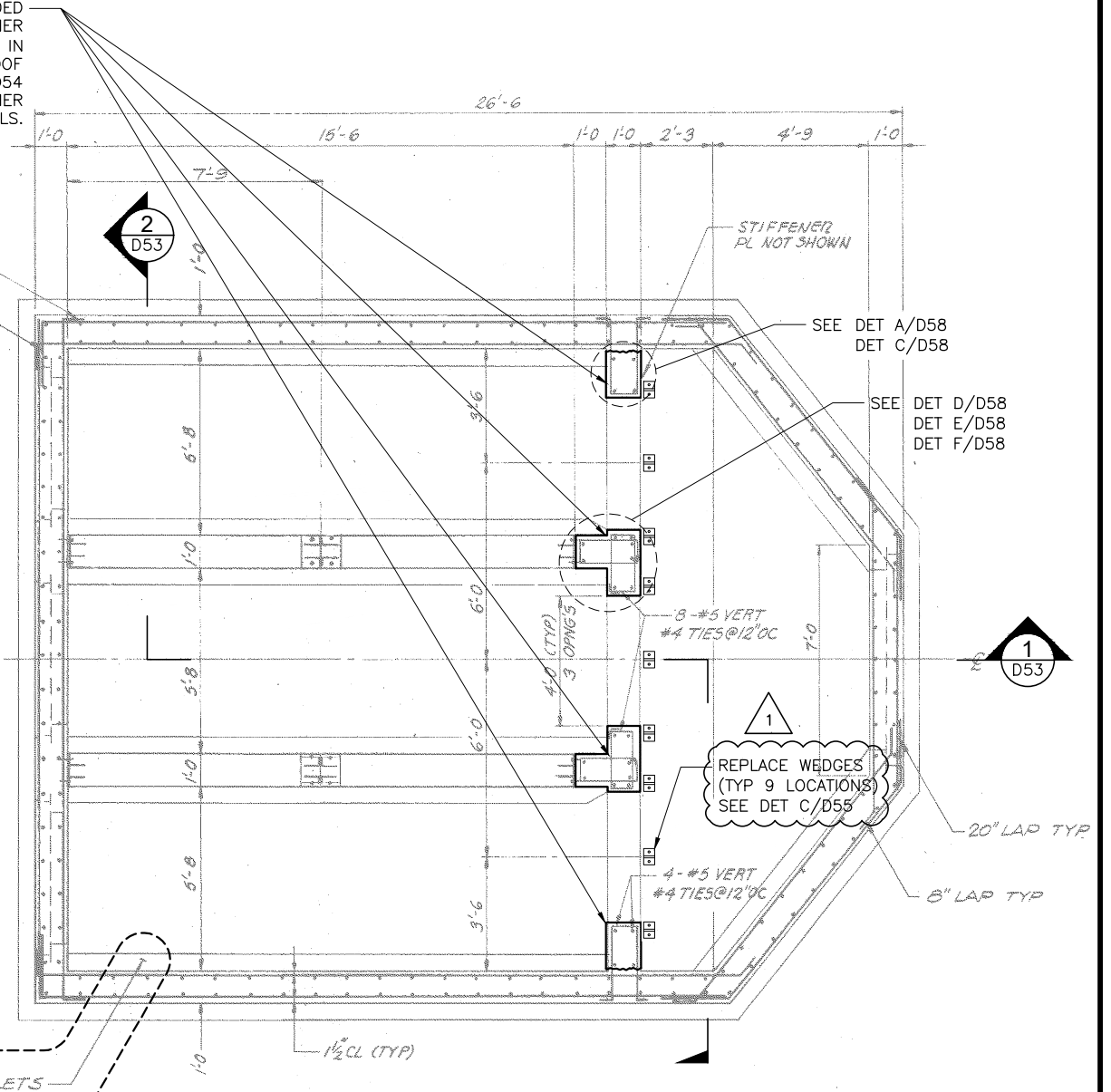
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DEMOLISH CONCRETE TO REMOVE EMBEDDED ANCHORS FOR STIFFENER PLATE AND RETAINER PLATE. DOWEL NEW REBAR TO (E) REBAR IN PERPENDICULAR WALL, BASE SLAB, AND ROOF BEAM. CAST NEW CONCRETE. SEE SHEETS D54 AND D55 FOR STIFFENER PLATE, RETAINER PLATE, AND WEDGE REPLACEMENT DETAILS.

REPAIR CONCRETE AROUND MANHOLE OPENINGS (TYP). LIMITS OF CONCRETE REPAIR ARE SHOWN APPROXIMATELY. LIMITS TO BE GOVERNED BY DET A/D56 AND SECTION 03930. (E) REBAR TO REMAIN, EXCEPT DAMAGED REBAR TO BE REPAIRED PER DET B/D56 AND DET C/D56. NOT ALL (E) REBAR SHOWN.

RAISED MANHOLE FRAMES NOT SHOWN FOR CLARITY (TYP)

REPLACE CONCRETE FILLETS (TYP). PROVIDE DOWELS OR STIRRUPS TO TIE NEW FILLETS TO (E) CONCRETE.

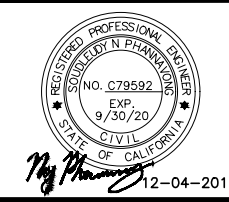


N15 COLUMN / WALL REPAIR PLAN

SCALE: 3/8" = 1'-0"

- GENERAL SHEET NOTES:**
- MISSION TRUNK BYPASS PIPING NOT SHOWN. SEE DET B/D13.
 - DURING DEMOLITION PRESERVE (E) REBAR AS REQUIRED TO TIE IN NEW CONCRETE PER OTHER SHEETS AND DETAILS.
 - EXIST ELECTRICAL CONDUITS FOR SLIDE GATE ACTUATORS NOT SHOWN. CONDUITS SHALL BE PROTECTED IN PLACE OR RESTORED TO MATCH EXIST CONDITION AFTER COMPLETION OF STRUCTURAL REPAIRS.
 - REPAIR ALL DAMAGED AND DISCONTINUOUS LINING ON WALLS AND CEILING OF STRUCTURE. ALL EXISTING LINING SEAMS, PATCHES, AND TERMINATIONS SHALL BE VISUALLY INSPECTED AND PHYSICALLY TESTED BY A NONDESTRUCTIVE PROBING METHOD. IN ADDITION, ALL LINING SURFACES, NEW AND EXISTING, SHALL BE TESTED WITH AN APPROVED ELECTRICAL HOLIDAY DETECTOR PER SECTION 03163. ALL HOLES OR LINING DAMAGE SHALL BE PATCHED. PATCHES MADE ENTIRELY WITH WELDING STRIP SHALL BE FUSED TO THE LINER OVER THE PATCH AREA. LARGER PATCHES MAY CONSIST OF SMOOTH LINER SHEET APPLIED OVER THE DAMAGED AREA WITH ADHESIVE. ALL EDGES MUST BE COVERED WITH WELDING STRIP FUSED TO THE PATCH AND THE SOUND LINING ADJOINING THE DAMAGED AREA.

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1	ADDENDUM 2	MDJ	1/29/20



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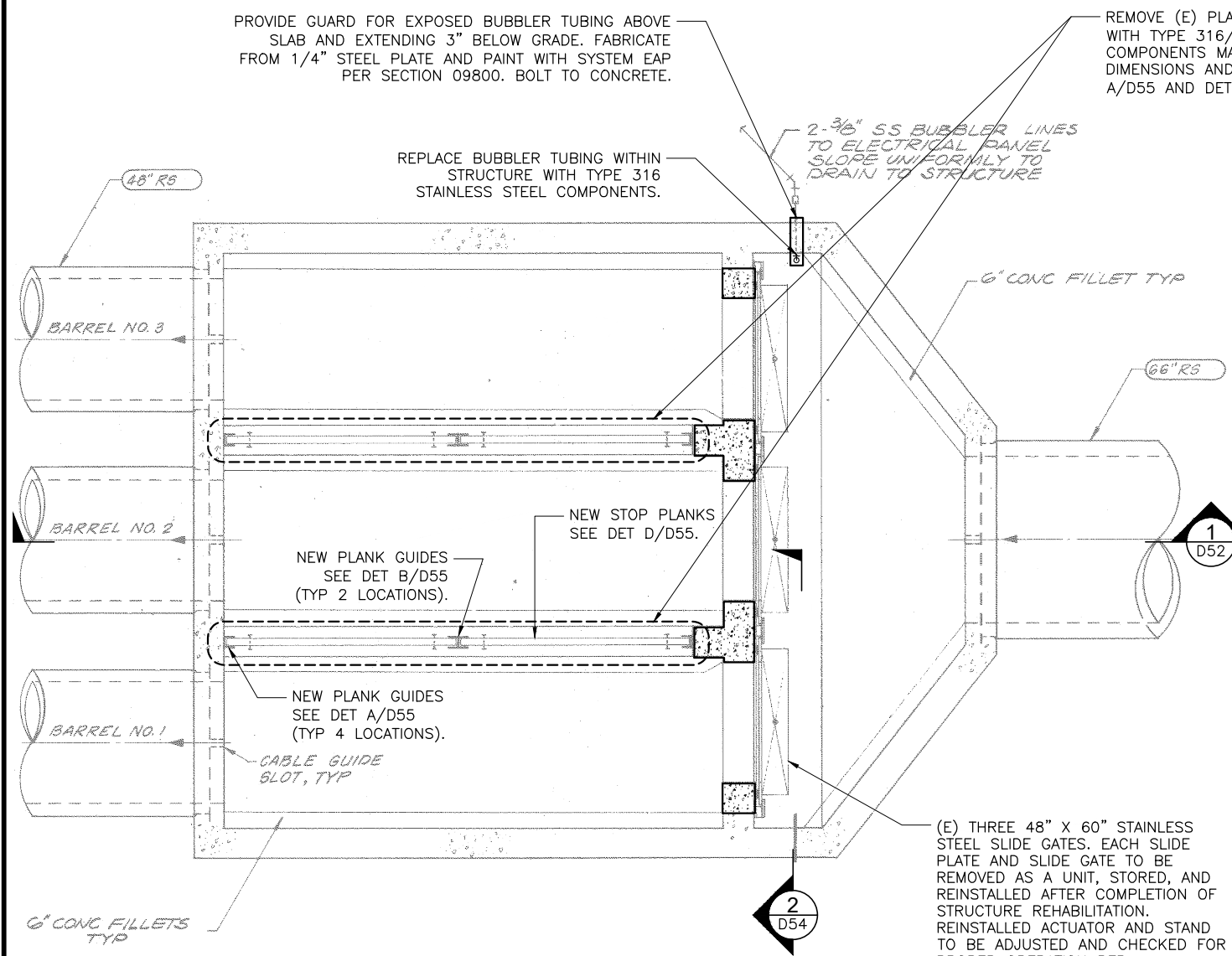
SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT

1000 Broadway, Suite 300
Oakland, CA 94607
Tel: (916) 903-6000, Fax: (916) 903-6801
Project No. 18-0244

N15 AND N24 STRUCTURES REHABILITATION

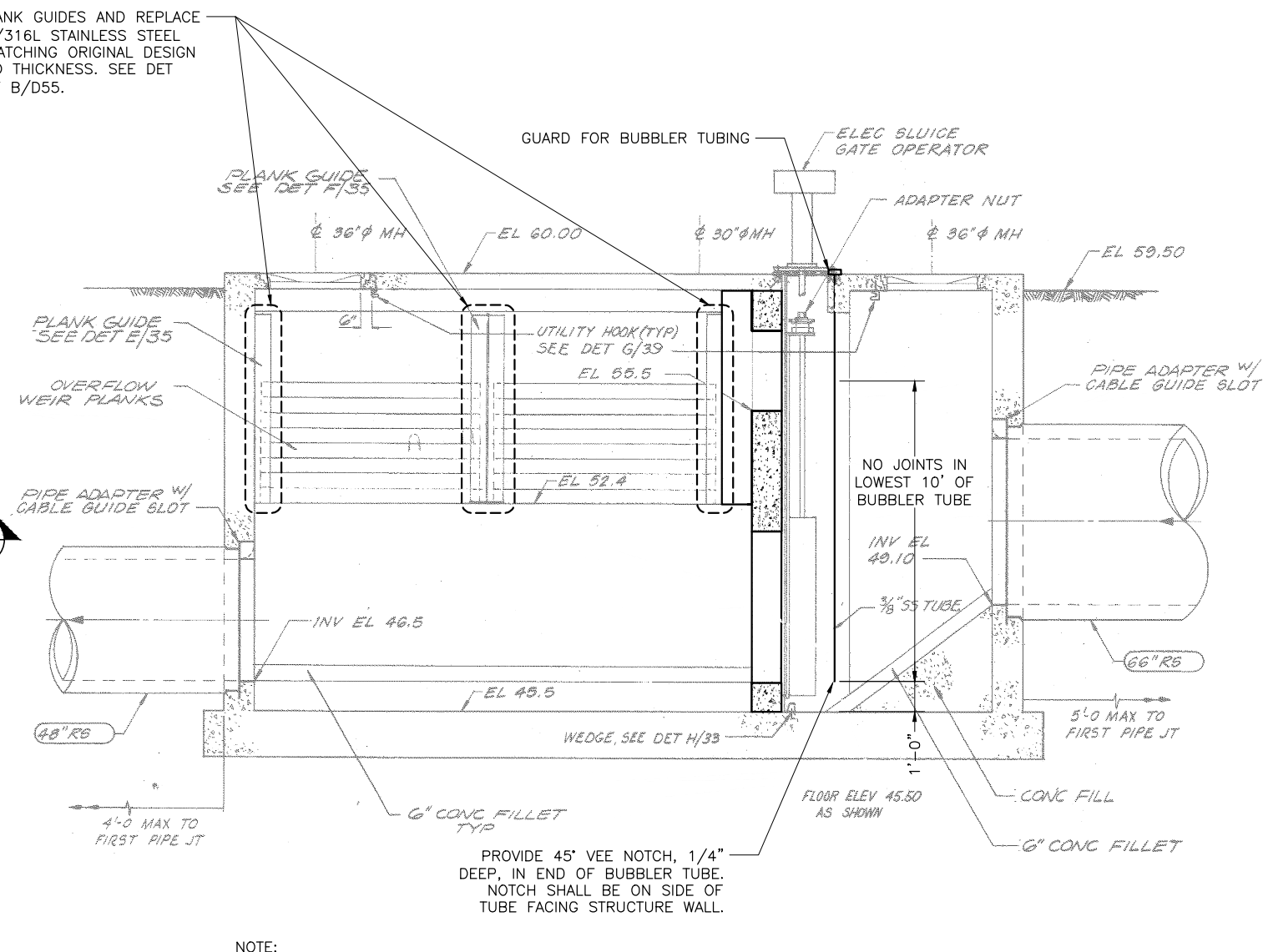
N15 ROOF AND WALL / COLUMN REPAIR PLANS

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WEIR PLANK REPAIR PLAN

SCALE: 3/8" = 1'-0"



SECTION 1

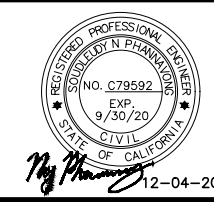
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(E) THREE 48" X 60" STAINLESS STEEL SLIDE GATES. EACH SLIDE PLATE AND SLIDE GATE TO BE REMOVED AS A UNIT, STORED, AND REINSTALLED AFTER COMPLETION OF STRUCTURE REHABILITATION. REINSTALLED ACTUATOR AND STAND TO BE ADJUSTED AND CHECKED FOR PROPER OPERATION PER MANUFACTURER'S RECOMMENDATIONS.

NOTE: SUPPORTS FOR BUBBLER TUBING NOT SHOWN. SUPPORTS SHALL BE PROVIDED PER SECTION 05500. HOLES IN STRUCTURE LINING AT ANCHOR BOLT HOLES SHALL BE SEALED PER DETAIL D/D56.

- GENERAL SHEET NOTES:
- MISSION TRUNK BYPASS PIPING NOT SHOWN. SEE DET B/D13.
 - DURING DEMOLITION PRESERVE (E) REBAR AS REQUIRED TO TIE IN NEW CONCRETE PER OTHER SHEETS AND DETAILS.

REVISIONS			
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SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT

N15 AND N24 STRUCTURES REHABILITATION

N15 WEIR PLANK GUIDE REPAIR PLAN AND SECTION

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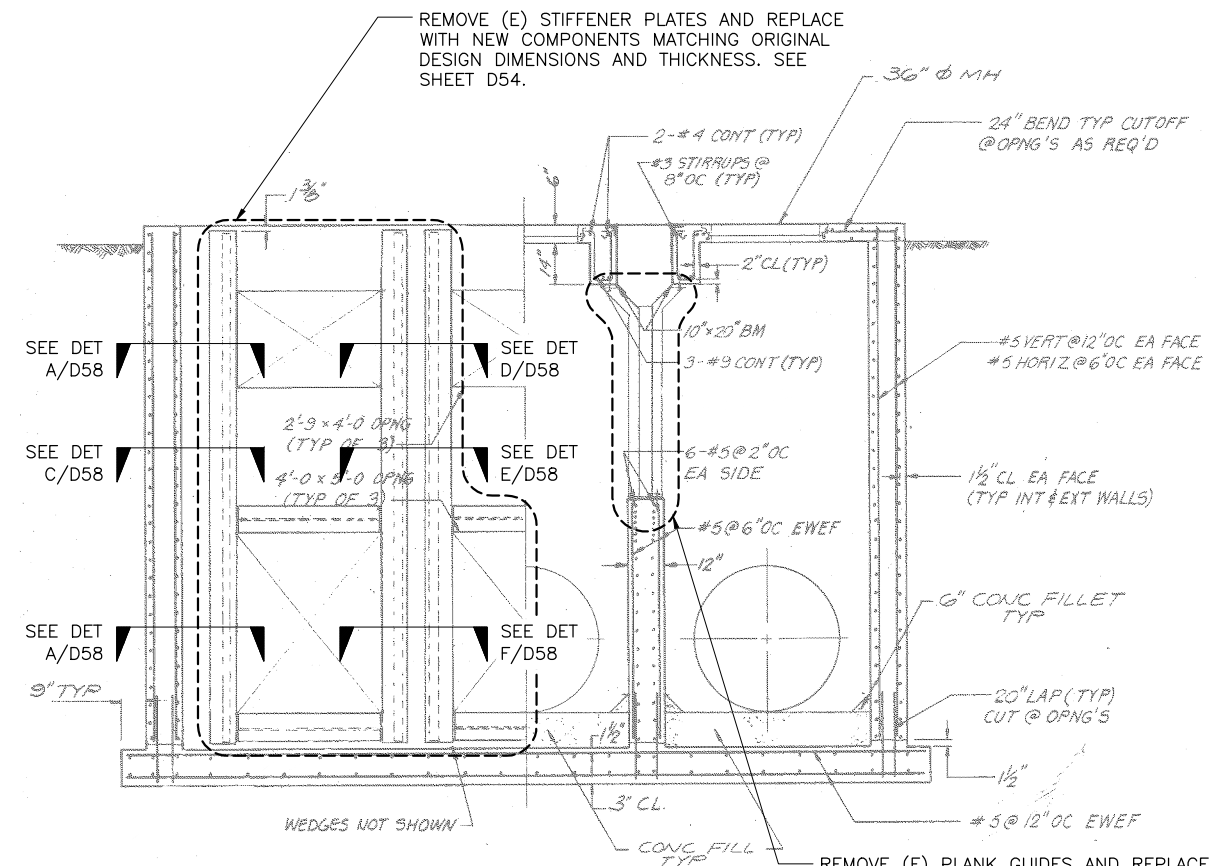
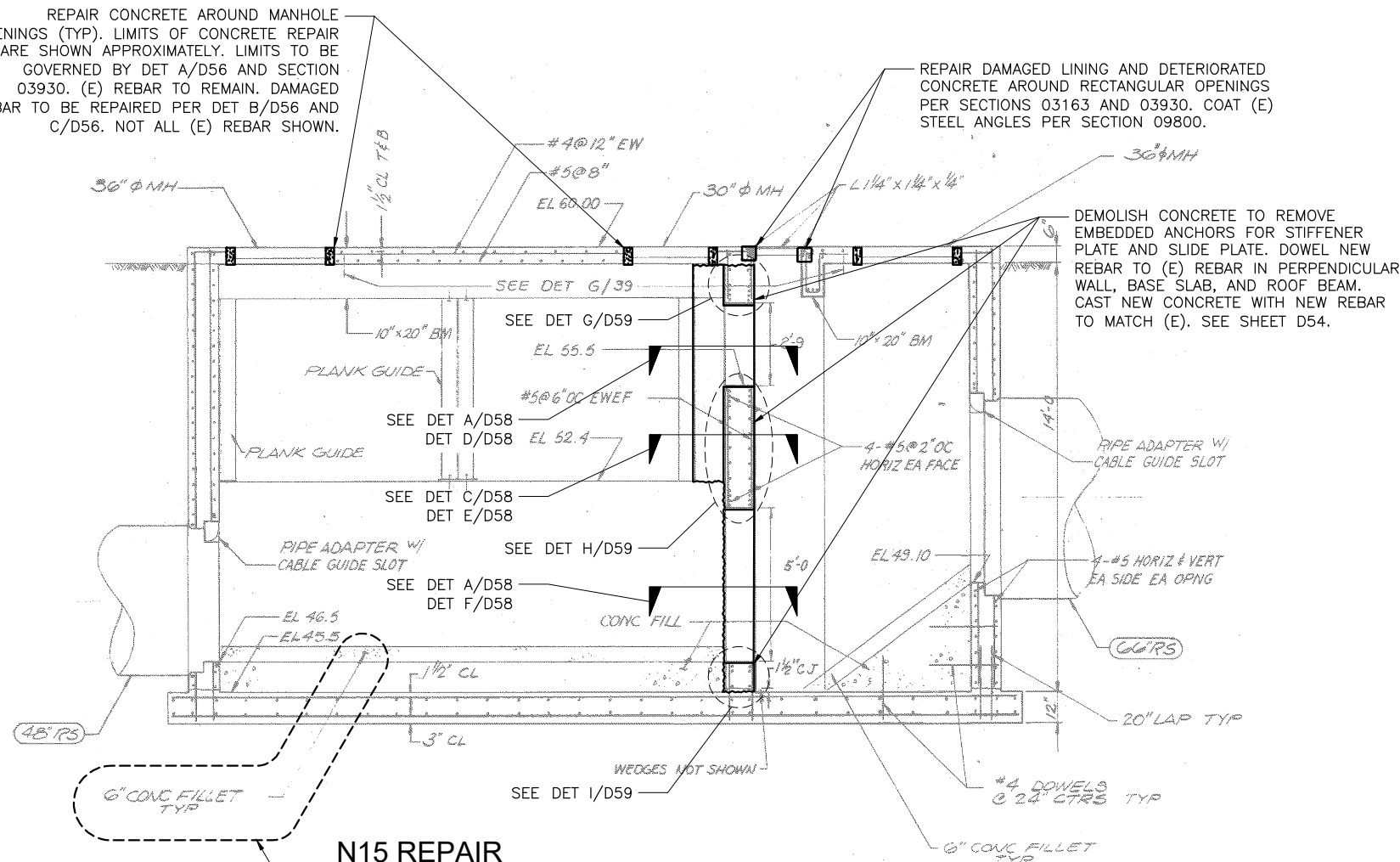
REPAIR CONCRETE AROUND MANHOLE OPENINGS (TYP). LIMITS OF CONCRETE REPAIR ARE SHOWN APPROXIMATELY. LIMITS TO BE GOVERNED BY DET A/D56 AND SECTION 03930. (E) REBAR TO REMAIN. DAMAGED REBAR TO BE REPAIRED PER DET B/D56 AND C/D56. NOT ALL (E) REBAR SHOWN.

REPAIR DAMAGED LINING AND DETERIORATED CONCRETE AROUND RECTANGULAR OPENINGS PER SECTIONS 03163 AND 03930. COAT (E) STEEL ANGLES PER SECTION 09800.

DEMOLISH CONCRETE TO REMOVE EMBEDDED ANCHORS FOR STIFFENER PLATE AND SLIDE PLATE. DOWEL NEW REBAR TO (E) REBAR IN PERPENDICULAR WALL, BASE SLAB, AND ROOF BEAM. CAST NEW CONCRETE WITH NEW REBAR TO MATCH (E). SEE SHEET D54.

REMOVE (E) STIFFENER PLATES AND REPLACE WITH NEW COMPONENTS MATCHING ORIGINAL DESIGN DIMENSIONS AND THICKNESS. SEE SHEET D54.

REMOVE (E) PLANK GUIDES AND REPLACE WITH TYPE 316/316L STAINLESS STEEL COMPONENTS MATCHING ORIGINAL DESIGN DIMENSIONS AND THICKNESS. SEE DET A/D55 AND DET B/D55.



N15 REPAIR SECTION

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N15 REPAIR SECTION

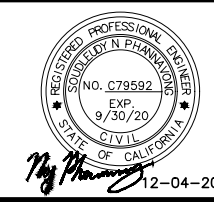
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D51

REPLACE CONCRETE FILLETS (TYP). PROVIDE DOWELS OR STIRRUPS TO TIE NEW FILLETS TO (E) CONCRETE.

- GENERAL SHEET NOTES:
- MISSION TRUNK BYPASS PIPING NOT SHOWN. SEE DET B/D13.
 - DURING DEMOLITION PRESERVE (E) REBAR AS REQUIRED TO TIE IN NEW CONCRETE PER OTHER SHEETS AND DETAILS.

REVISIONS			
REV.	DESCRIPTION	BY	DATE



SURVEY	
B.M.:	ELEV.:
DESC.	
PLANS:	F.B.:
PROFILE:	F.B.:
DATUM:	



SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT

1000 Broadway, Suite 320
Oakland, CA 94607
Tel: (916) 903-6000, Fax: (916) 903-6601
Project No. 18-0244

N15 AND N24 STRUCTURES REHABILITATION

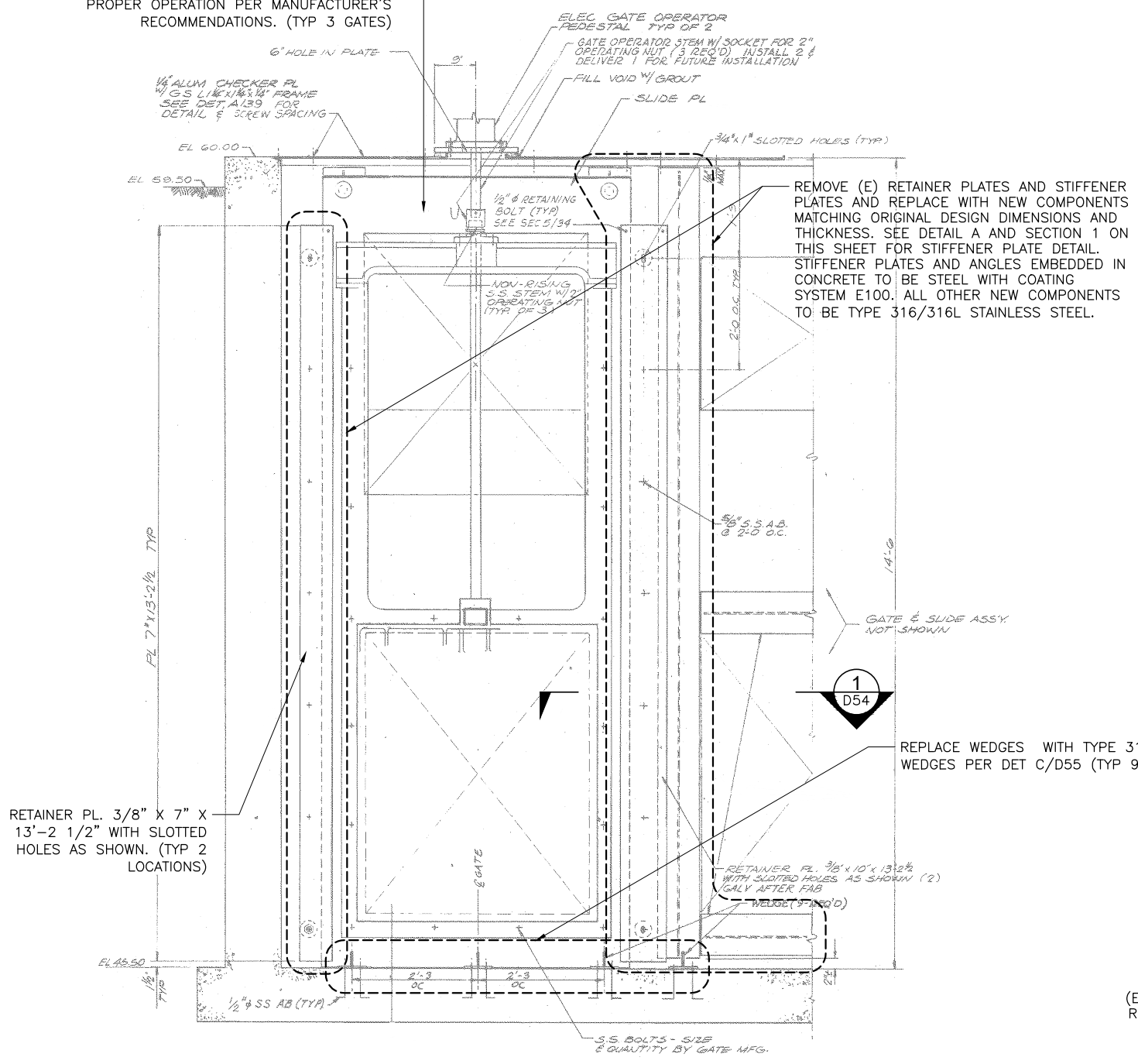
N15 REPAIR SECTIONS

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SHEET DATE 12/04/2019

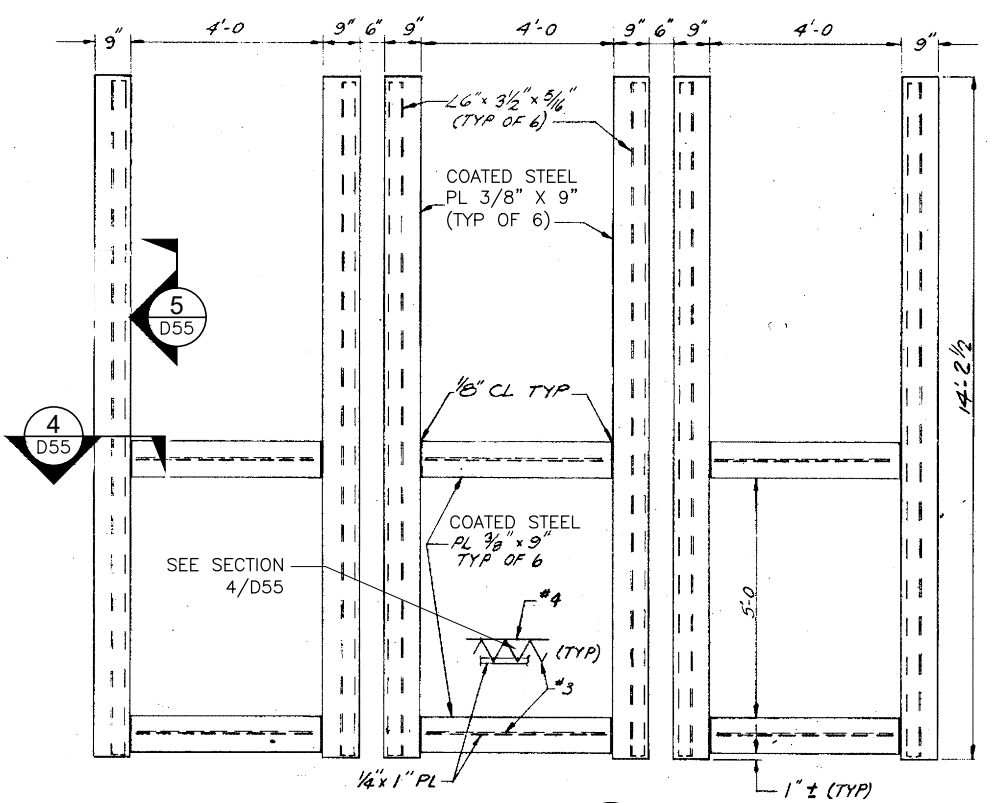
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(E) SLIDE PLATE AND (E) SLIDE GATE TO BE REMOVED AS A UNIT, STORED, AND REINSTALLED AFTER COMPLETION OF STRUCTURE REHABILITATION. REINSTALLED ACTUATOR AND STAND TO BE ADJUSTED AND CHECKED FOR PROPER OPERATION PER MANUFACTURER'S RECOMMENDATIONS. (TYP 3 GATES)

NOTE: DURING DEMOLITION PRESERVE (E) REBAR AS REQUIRED TO TIE IN NEW CONCRETE PER OTHER SHEETS AND DETAILS.

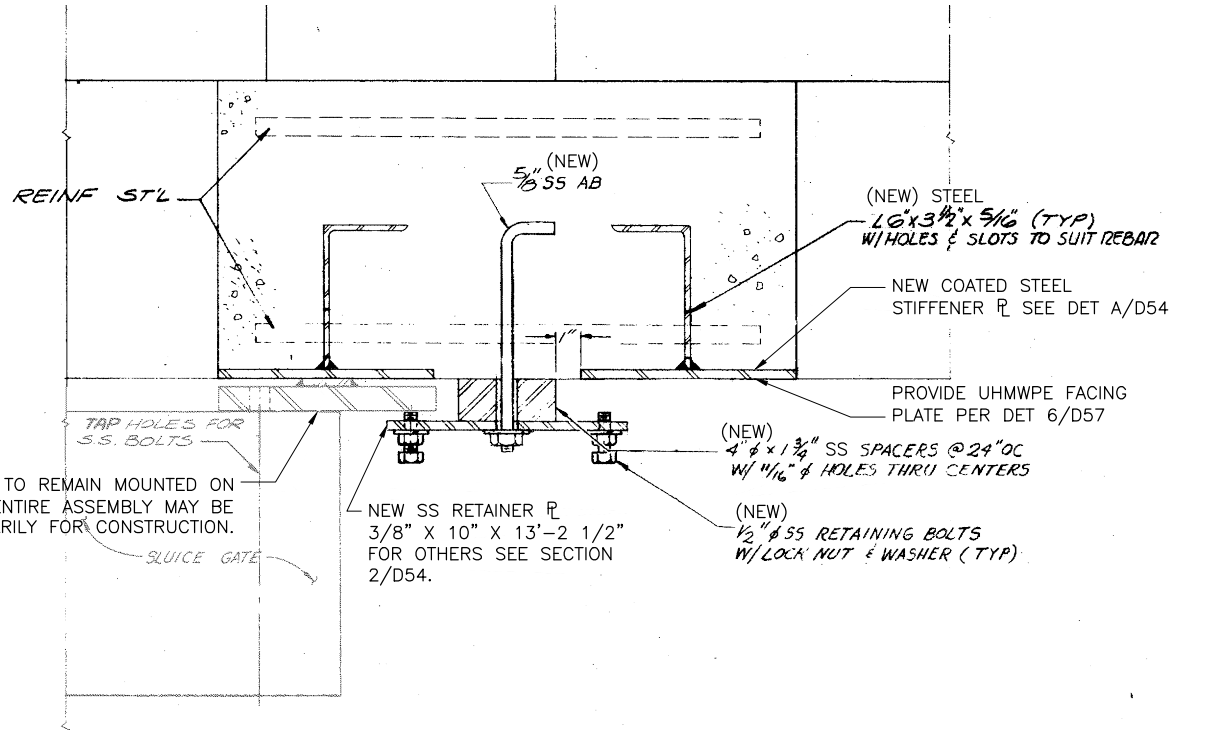


SECTION 2
SCALE: 3/4" = 1'-0"



STIFFENER PLATE DETAIL A
SCALE: 1/2" = 1'-0"

NOTE: ALL STIFFENER PLATES TO BE FLAT WITHIN ±1/16" ALONG THE LENGTH OF A 6' STRAIGHTEDGE AFTER INSTALLATION. CHECK AT MULTIPLE LOCATIONS DISTRIBUTED ACROSS AREA OF STIFFENER PLATES. FURTHER SHIMMING OF FACING PLATES, TO PREVENT LEAKS, MAY BE REQUIRED PER DET 6/D57.



SECTION 1
SCALE: 3" = 1'-0"

REVISIONS			
REV.	DESCRIPTION	BY	DATE



SURVEY	
B.M.:	ELEV.:
DESC.	
PLANS:	F.B.:
PROFILE:	F.B.:
DATUM:	



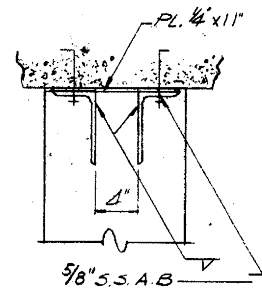
N15 AND N24 STRUCTURES REHABILITATION

N15 STIFFENER PLATE AND RETAINER PLATE SECTION AND DETAILS

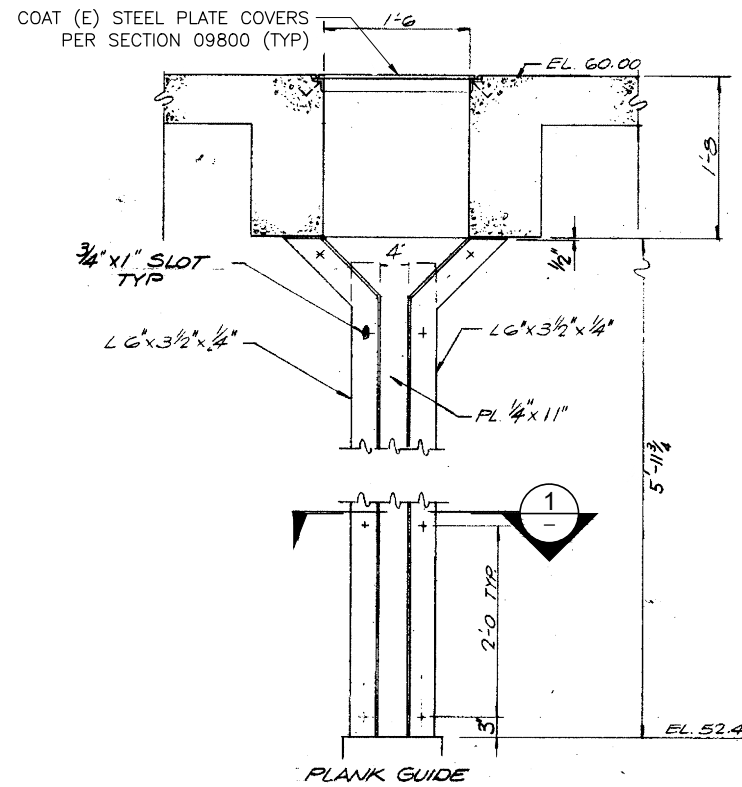
CONTRACT NO. 6011	SCALE AS SHOWN
FILE NAME 18-0244 N15.dwg	DRAWING
DRAWN SPS	DESIGNED SNP
CHECKED GHW	SHEET DATE 12/04/2019

NOTES:

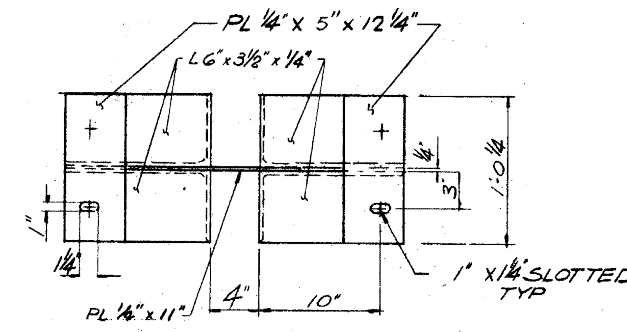
1. PLANK GUIDE COMPONENTS SHOWN IN DETAIL A AND DETAIL B SHALL BE FABRICATED FROM TYPE 316L STAINLESS STEEL. ANCHOR BOLTS AND FASTENERS SHALL ALSO BE TYPE 316 STAINLESS STEEL.
2. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OF PLANK GUIDE COMPONENTS.
3. ELEVATIONS SHOWN ON THIS SHEET ARE FOR REFERENCE ONLY AND MAY NOT MATCH ELEVATIONS SHOWN ON OTHER SHEETS IN CONTRACT DOCUMENTS.



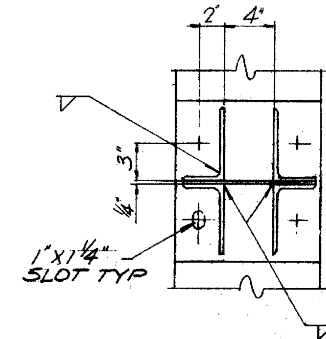
SECTION 1
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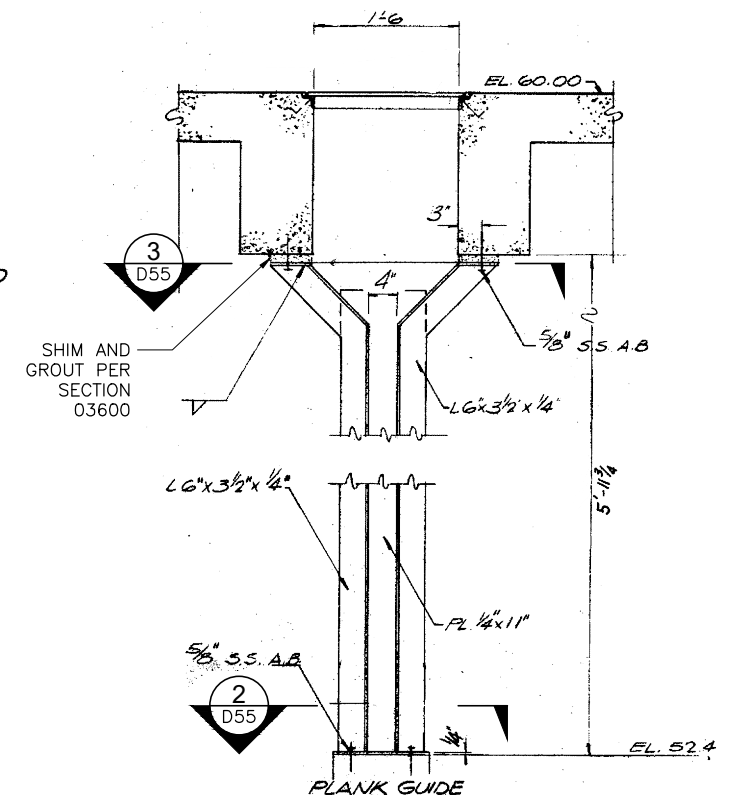
DETAIL A
SCALE: 1" = 1'-0"



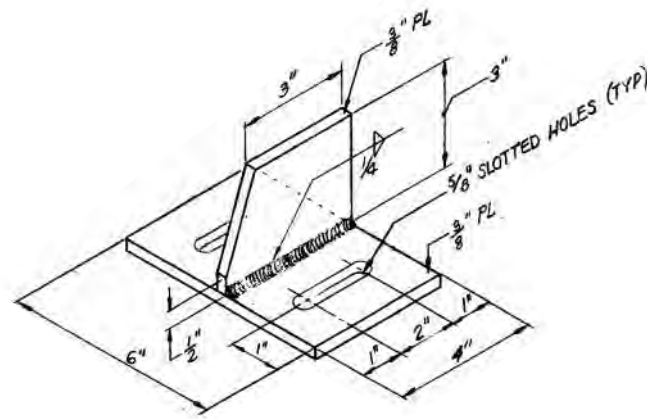
SECTION 2
SCALE: 1 1/2" = 1'-0"



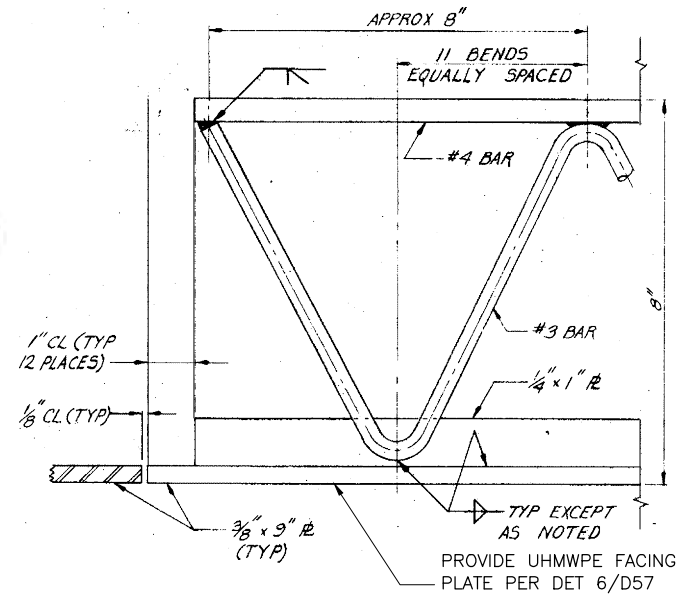
SECTION 3
SCALE: 1 1/2" = 1'-0"



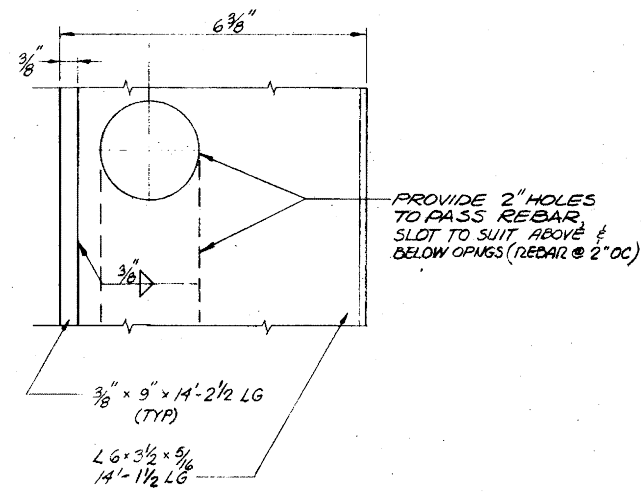
DETAIL B
SCALE: 1" = 1'-0"



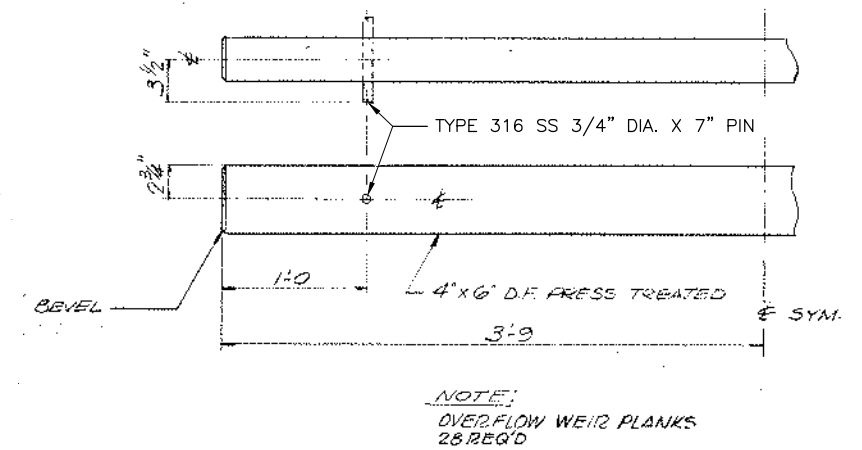
DETAIL C
SCALE: 1" = 1'-0"



SECTION 4
SCALE: 6" = 1'-0"

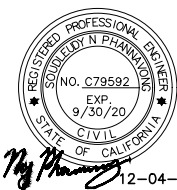


SECTION 5
SCALE: 6" = 1'-0"



DETAIL D
SCALE: 1 1/2" = 1'-0"

REVISIONS			
REV.	DESCRIPTION	BY	DATE



SURVEY	
B.M.:	ELEV.:



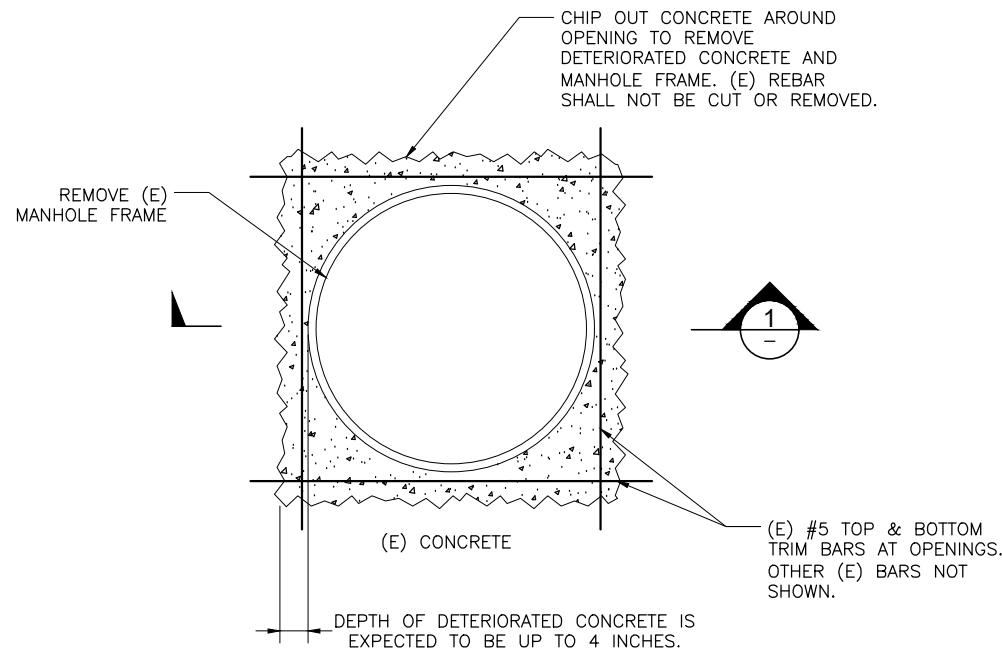
SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT

1000 Broadway, Suite 300
Oakland, CA 94607
Tel: (510) 903-6000, Fax: (510) 903-6801
Project No. 18-0244

N15 AND N24 STRUCTURES REHABILITATION

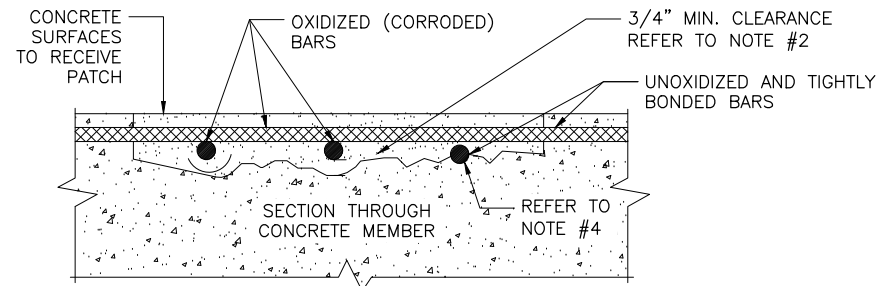
N15 PLANK GUIDE AND MISCELLANEOUS DETAILS

CONTRACT NO. 6011	SCALE AS SHOWN
FILE NAME 18-0244 N15.dwg	DRAWING
DRAWN SPS	D55
DESIGNED SNP	
CHECKED GHW	
SHEET DATE 12/04/2019	



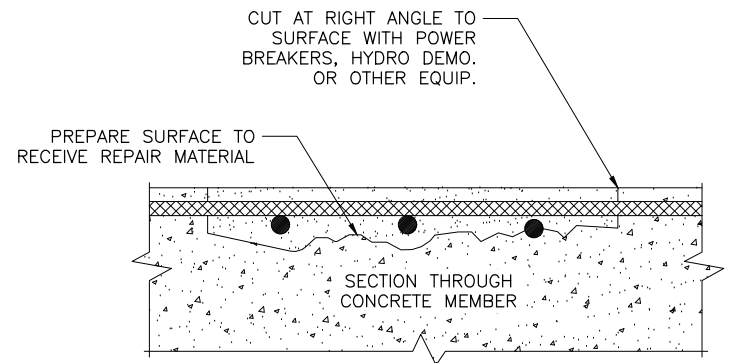
TYPICAL REPAIR FOR MANHOLE OPENINGS DETAIL

SCALE: NTS



NOTES:

1. REMOVE LOOSE OR DELAMINATED CONCRETE ABOVE CORRODED REINFORCING STEEL. ONCE INITIAL REMOVALS ARE MADE PROCEED WITH UNDERCUTTING OF EXPOSED CORRODED BARS. UNDERCUTTING WILL PROVIDE CLEARANCE FOR UNDER BAR CLEANING, FULL BAR CIRCUMFERENCE BONDING TO SURROUNDING CONCRETE, AND WILL SECURE PATCH STRUCTURALLY.
2. PROVIDE MINIMUM 3/4" CLEARANCE BETWEEN EXPOSED REBAR AND SURROUNDING CONCRETE OR 1/4" LARGER THAN LARGEST AGGREGATE IN REPAIR MORTAR, WHICHEVER IS GREATER. ADDITIONAL CLEARANCE MAY BE REQUIRED WHERE MECHANICAL REBAR COUPLERS ARE USED.
3. IF UNOXIDIZED REINFORCING STEEL IS EXPOSED DURING UNDERCUTTING PROCESS, TAKE CARE NOT TO DAMAGE BARS' BOND TO SURROUNDING CONCRETE. IF BOND BETWEEN BAR AND CONCRETE IS BROKEN, UNDERCUTTING OF BAR IS REQUIRED.
4. IF THE REINFORCING STEEL HAS MORE THAN 25% OF THE CROSS SECTIONAL AREA LOST ALONG ITS EXPOSED LENGTH, THE REINFORCING STEEL SHALL BE REPLACED AND MECHANICALLY SPICED TO SOUND, ADJACENT REINFORCING STEEL. THE CONTRACTOR SHALL REMOVE ENOUGH OF THE CONCRETE AROUND THE CIRCUMFERENCE OF THE REINFORCING BAR TO ACCOMMODATE THE SPLICES AND/OR COUPLER INSTALLATION AND TO ALLOW FOR BONDING BETWEEN THE REINFORCING STEEL AND THE NEW CEMENTITIOUS MORTAR MATERIAL. THE MINIMUM REPAIR LENGTH OF THE REINFORCING STEEL SHALL BE 6 INCHES.
5. SECURE REINFORCEMENT WHICH IS LOOSE IN PLACE BY TYING TO OTHER SECURED BARS OR BY OTHER APPROVED METHODS.



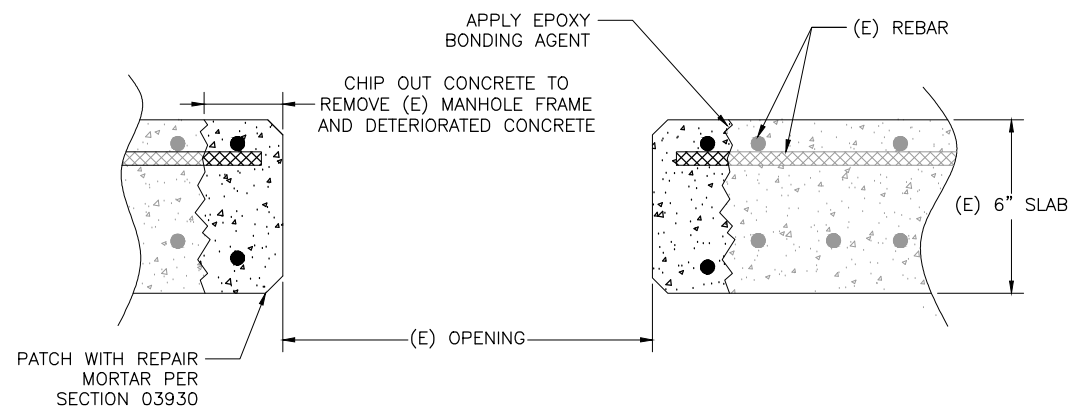
NOTE:

1. AT THE EDGE LOCATIONS, SAW CUT EDGES AT 1/2-INCH MINIMUM DEPTH AND RIGHT ANGLE CUTS TO AVOID FEATHERED EDGES. FOR EXAMPLE:



TYP EXPOSING AND RESURFACING DETAIL

NTS



NOTES:

1. ALL EXISTING REBAR TO REMAIN. WHERE EXISTING REBAR IS CORRODED OR DAMAGED, CONTRACTOR SHALL REPLACE PER SECTION 03930.
2. MANHOLE FRAME AND NEW PVC LINING NOT SHOWN.
3. INSTALL 5/16" EYE-BOLT TO HANG EQUIPMENT IN EACH MANHOLE PER DET E/D56.

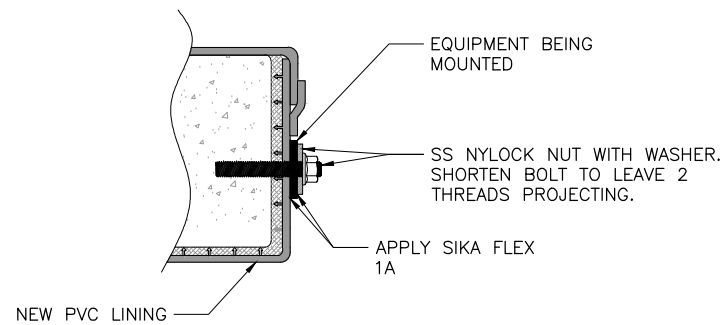
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SCALE: NTS



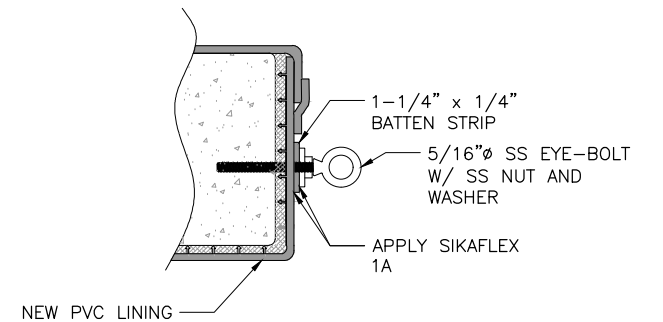
TYP EXPOSING & UNDERCUTTING REINFORCING STEEL DETAIL

NTS



TYPICAL BOLT TERMINATION ON PVC LINER DETAIL

SCALE: NTS

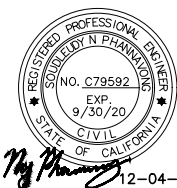


EYE-BOLT HANGER DETAIL

SCALE: NTS



REVISIONS			
REV.	DESCRIPTION	BY	DATE



SURVEY	
B.M.:	ELEV.:
DESC.	
PLANS:	F.B.:
PROFILE:	F.B.:
DATUM:	

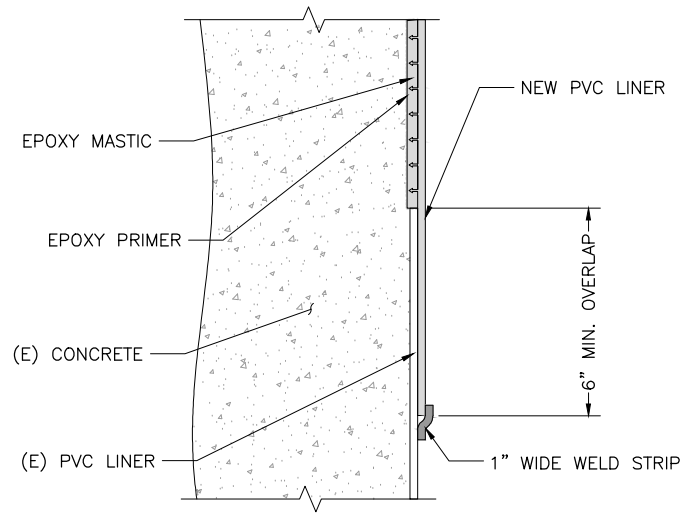


SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT

N15 AND N24 STRUCTURES REHABILITATION

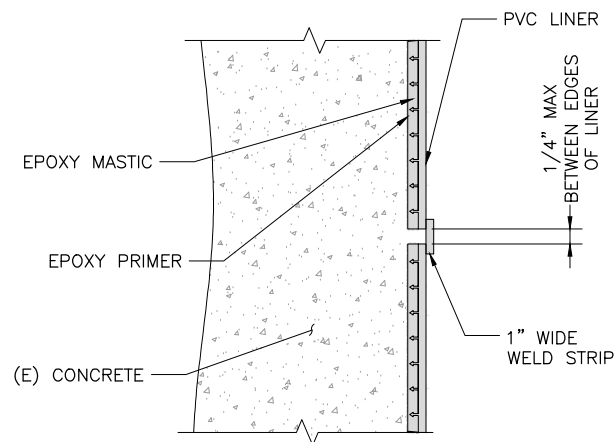
N15 TYPICAL DETAILS

CONTRACT NO. 6011	SCALE AS SHOWN
FILE NAME 18-0244 N15.dwg	DRAWING
DRAWN SPS	D56
DESIGNED SNP	
CHECKED GHW	
SHEET DATE 12/04/2019	



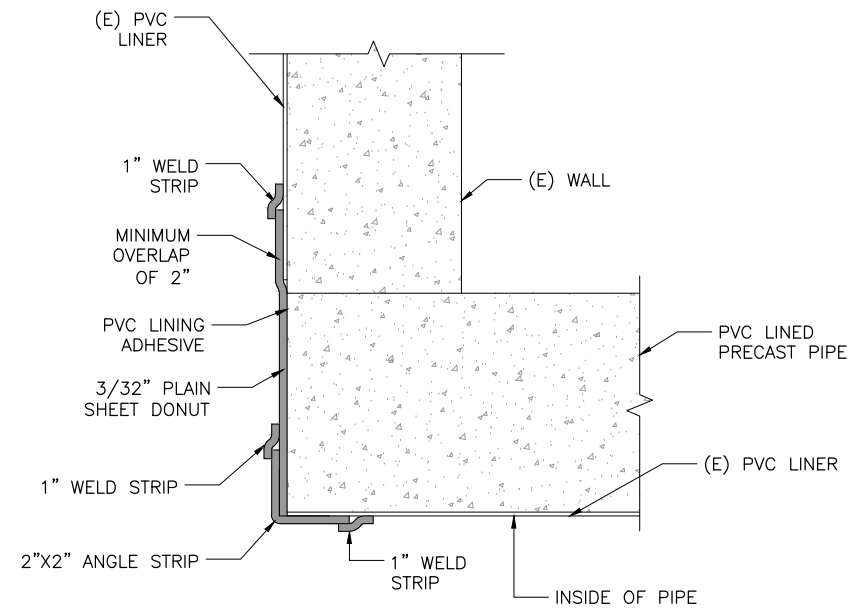
TERMINATION OF NEW LINER ONTO EXISTING LINER DETAIL

1
-
NTS



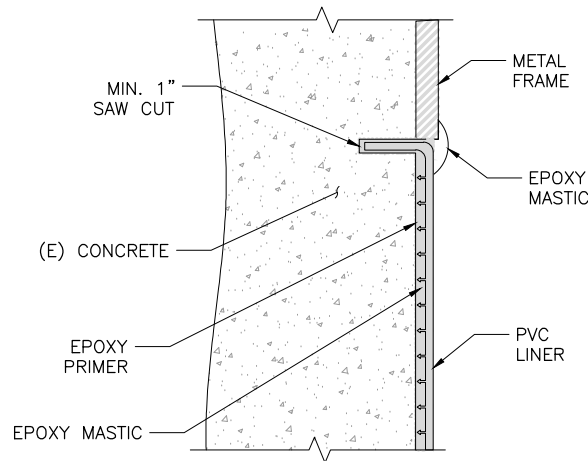
WELD STRIP AT JOINTS DETAIL

2
-
NTS



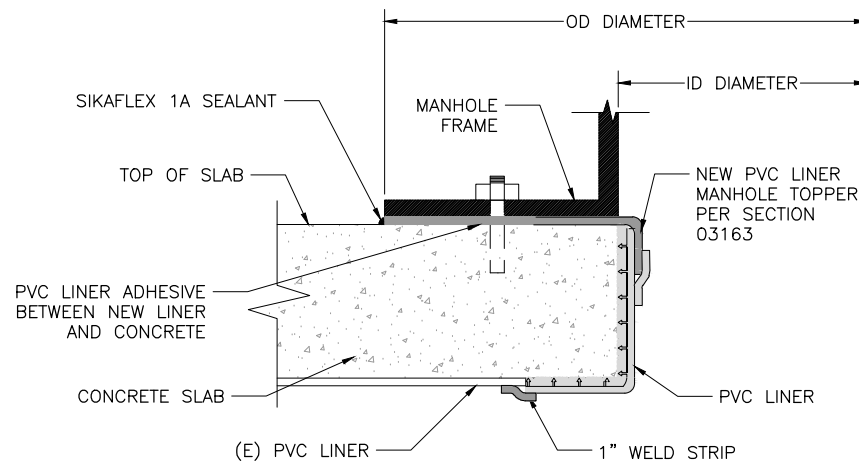
PVC LINING REPAIR AT INLET PIPE TRANSITIONS DETAIL

3
-
NTS



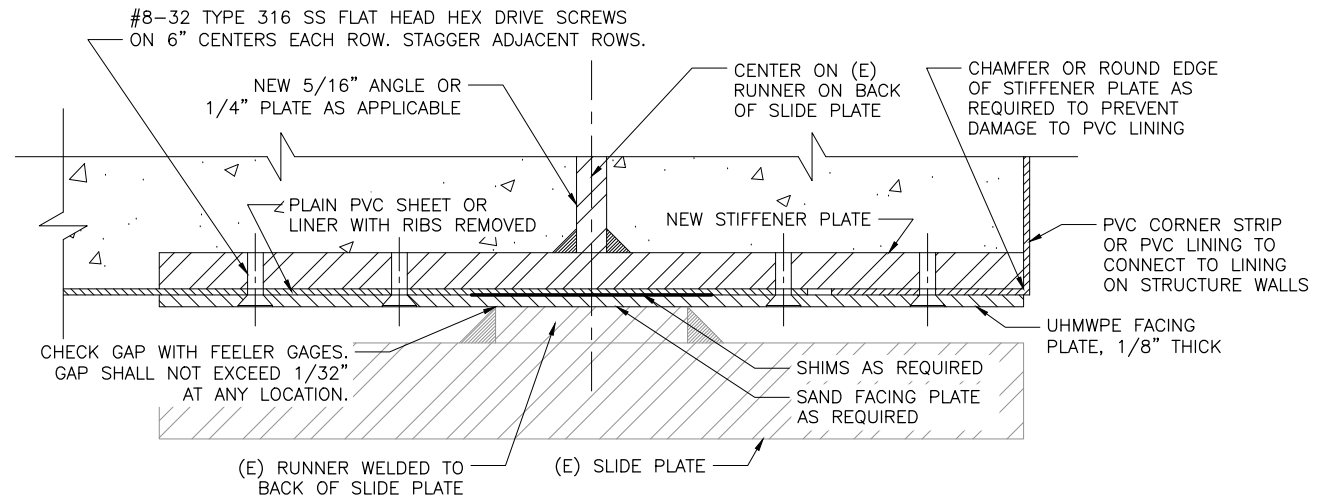
TERMINATION AT METAL FRAME DETAIL

4
-
NTS



LINING TERMINATION AT ACCESS MANHOLE DETAIL

5
-
NTS



NOTES:

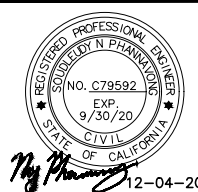
1. TO ACHIEVE SPECIFIED 1/32" MAX. GAP BETWEEN FACING PLATE AND (E) RUNNER, ADD SHIMS BEHIND FACING PLATE OR SAND FRONT OF FACING PLATE AS REQUIRED. GRINDING OF (E) RUNNERS MAY ALSO BE REQUIRED. GAP SHALL BE CHECKED WITH GATE MOUNTED IN NORMAL POSITION USING RETAINING BOLTS. THIS MAY REQUIRE THE USE OF A DUMMY RETAINER PLATE (SEE SHEET D54) THAT ALLOWS ACCESS FOR THE FEELER GAUGES.
2. PVC LINER SHALL BE SEALED TO COATED STEEL STIFFENER PLATE USING AN APPROVED MASTIC. UHMWPE (ULTRA-HIGH MOLECULAR WEIGHT POLYETHYLENE) FACING PLATE IS APPLIED OVER PVC LINER TO PROTECT PVC LINER AND COATED STEEL STIFFENER PLATE WHEN SLIDE PLATES ARE BEING INSERTED OR REMOVED.
3. AFTER FINAL ADJUSTMENTS TO FACING PLATE (SHIMS, SANDING), MOUNTING SCREWS SHALL BE INSTALLED FOR THE FINAL TIME USING A HIGH-STRENGTH THREAD LOCKER, LOCTITE 263 OR APPROVED EQUAL.
4. SCREW HOLES SHALL BE TAPPED IN STIFFENER PLATE. ENSURE SCREW HEADS ARE COUNTERSUNK BELOW FACE OF UHMWPE FACING PLATE TO PROVIDE A SMOOTH SURFACE.
5. CHAMFER EDGES OF UHMWPE FACING PLATES AS REQUIRED FOR SMOOTH INSERTION AND REMOVAL OF SLIDE PLATES.

DETAIL

SCALE: 1'-0" = 1'-0"

6
-
D54,D55

REVISIONS			
REV.	DESCRIPTION	BY	DATE



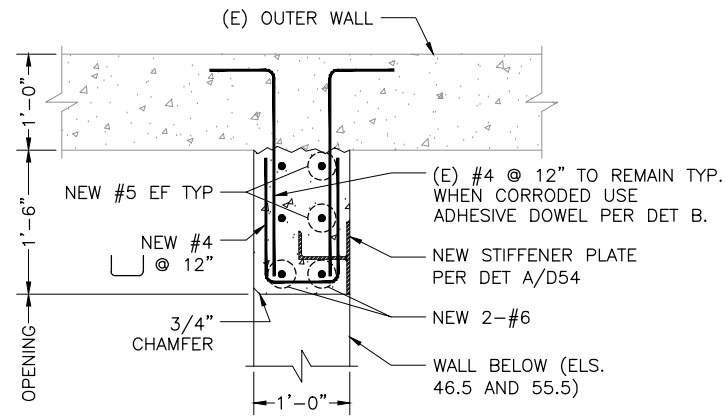
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B.M.:	ELEV.:



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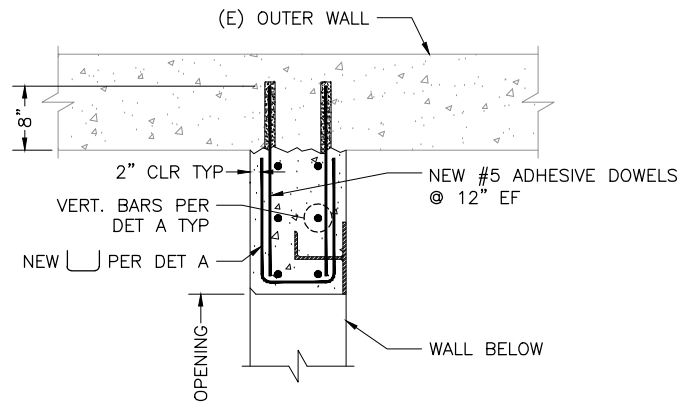
N15 AND N24 STRUCTURES REHABILITATION
N15 COATING AND LINING DETAILS

CONTRACT NO. 6011	SCALE AS SHOWN
FILE NAME 18-0244 N15.dwg	DRAWING
DRAWN SPS	D57
DESIGNED SNP	47 of 55 SHEETS
CHECKED GHW	
SHEET DATE 12/04/2019	



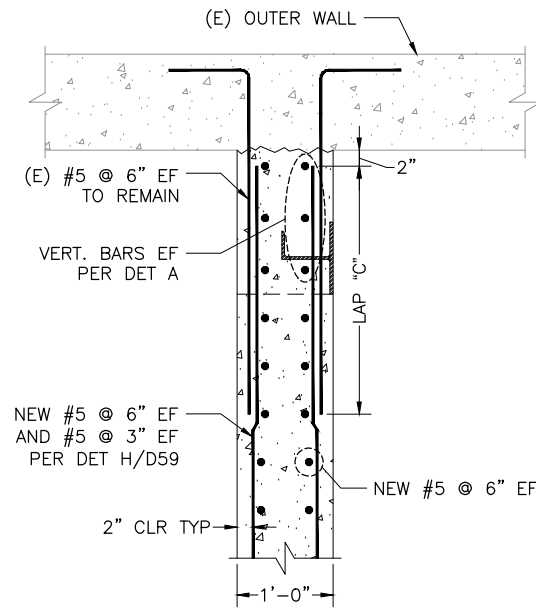
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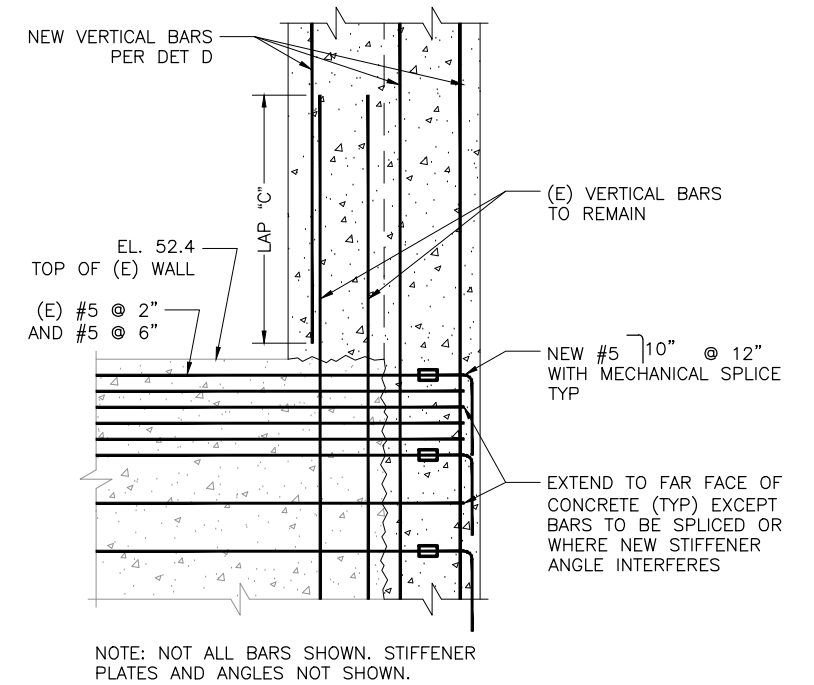
DETAIL

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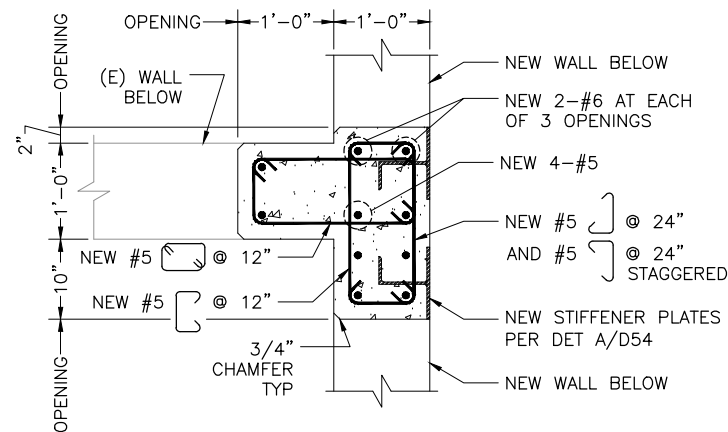
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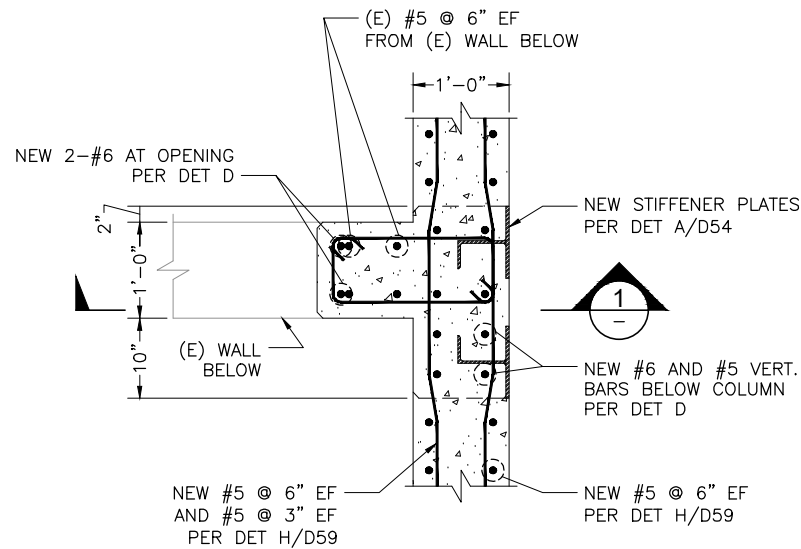
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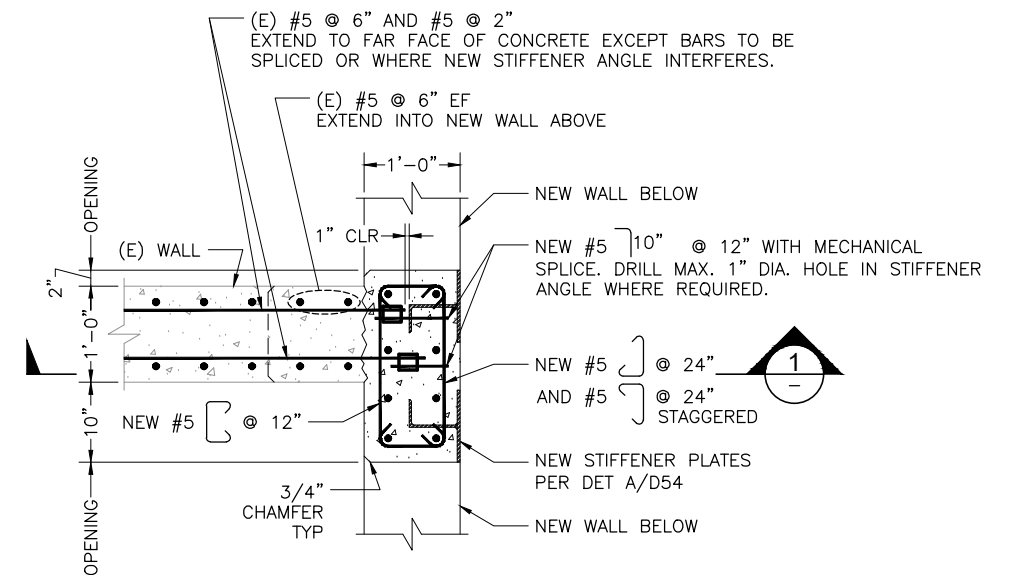
DETAIL

SCALE: 1" = 1'-0"



DETAIL

SCALE: 1" = 1'-0"



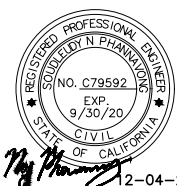
DETAIL

SCALE: 1" = 1'-0"



NOTE: FOR NEW VERTICAL BARS SEE DET. D.

REVISIONS			
REV.	DESCRIPTION	BY	DATE



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B.M.:	ELEV.:



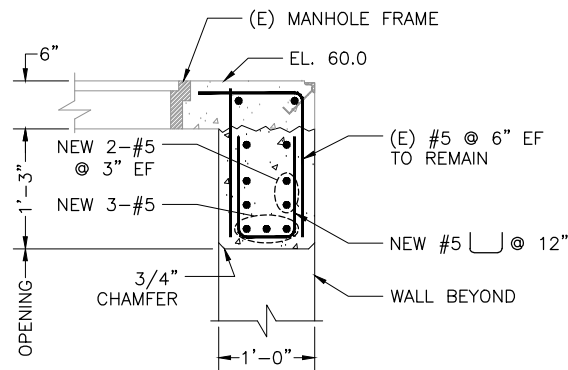
SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT

1000 Broadway, Suite 300
Oakland, CA 94607
Tel: (510) 903-6800, Fax: (510) 903-6801
Project No. 18-0244

N15 AND N24 STRUCTURES REHABILITATION

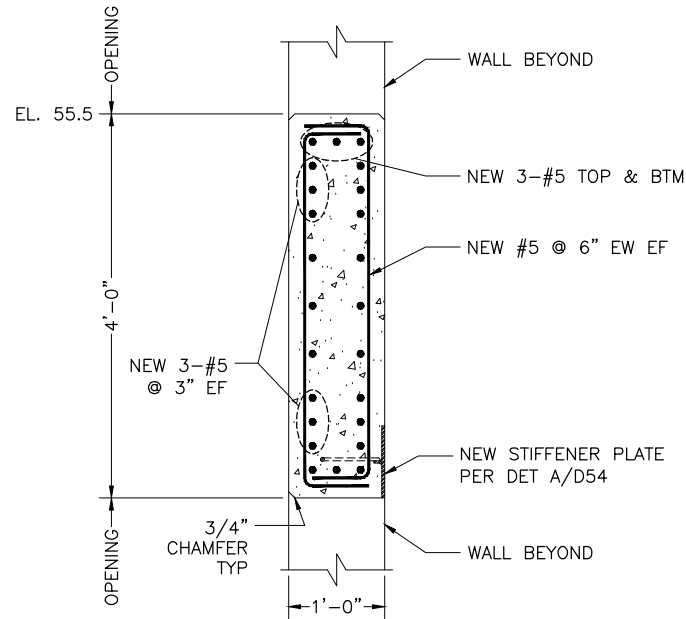
N15 STRUCTURAL DETAILS

CONTRACT NO. 6011	SCALE AS SHOWN
FILE NAME 18-0244 N24.dwg	DRAWING
DRAWN MDJ	D58
DESIGNED LTZ	48 of 55 SHEETS
CHECKED SNP	Page 27
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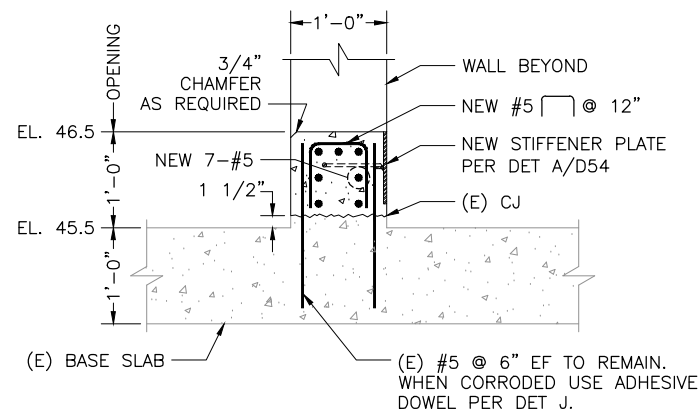
DETAIL

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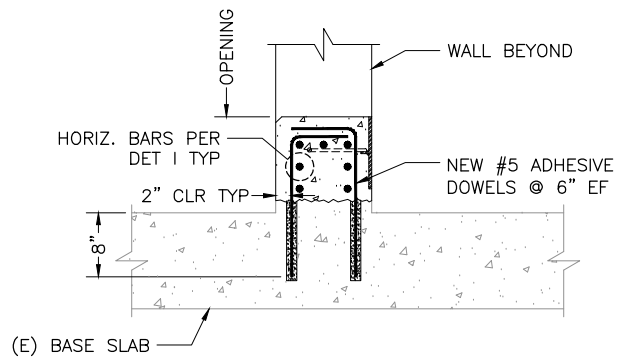
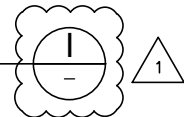
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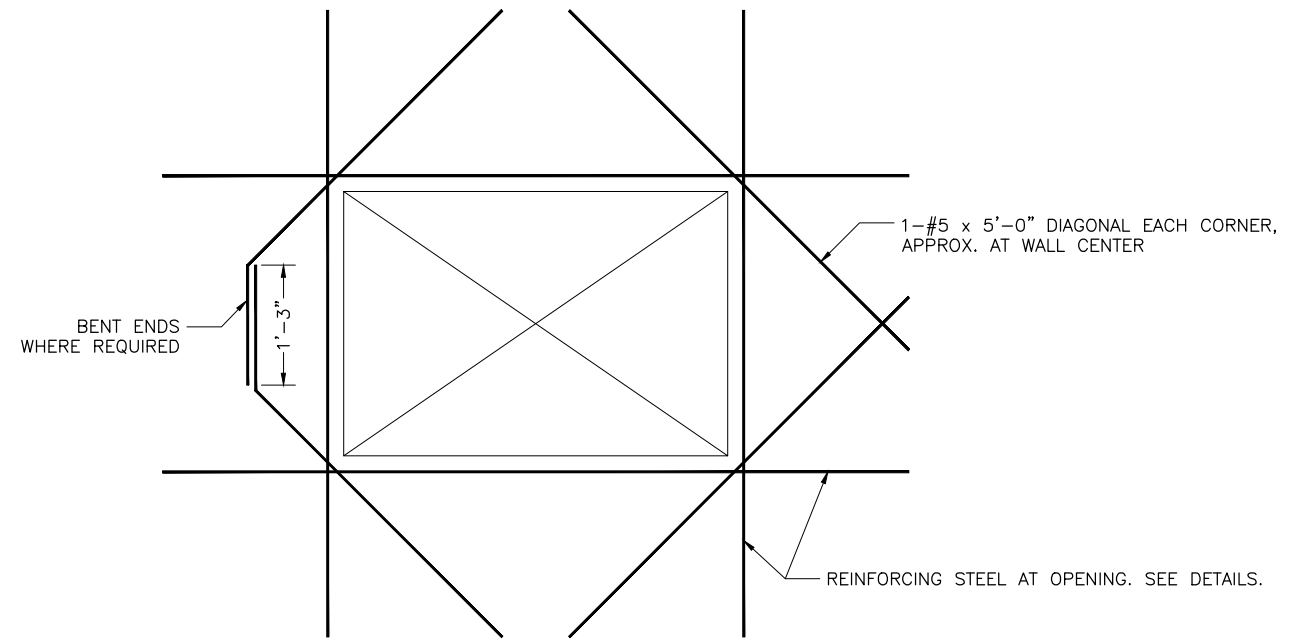
DETAIL

SCALE: 1" = 1'-0"



DETAIL

SCALE: 1" = 1'-0"



REINFORCEMENT AT OPENING IN WALL DETAIL

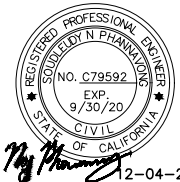
N.T.S.



NOTE: ANY ADJACENT CONCRETE FILL OR CONCRETE FILLETS THAT ARE DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE RESTORED TO MATCH EXIST.

NOTE: THIS DETAIL NOT TO BE USED EXCEPT AS DESCRIBED IN DET I. DIMENSIONS AND CONFIGURATION TO MATCH DET I EXCEPT AS NOTED IN THIS DETAIL.

REVISIONS			
REV.	DESCRIPTION	BY	DATE
1	ADDENDUM 2	MDJ	1/29/20



SURVEY	
B.M.:	ELEV.:
DESC.	
PLANS:	F.B.:
PROFILE:	F.B.:
DATUM:	



SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT



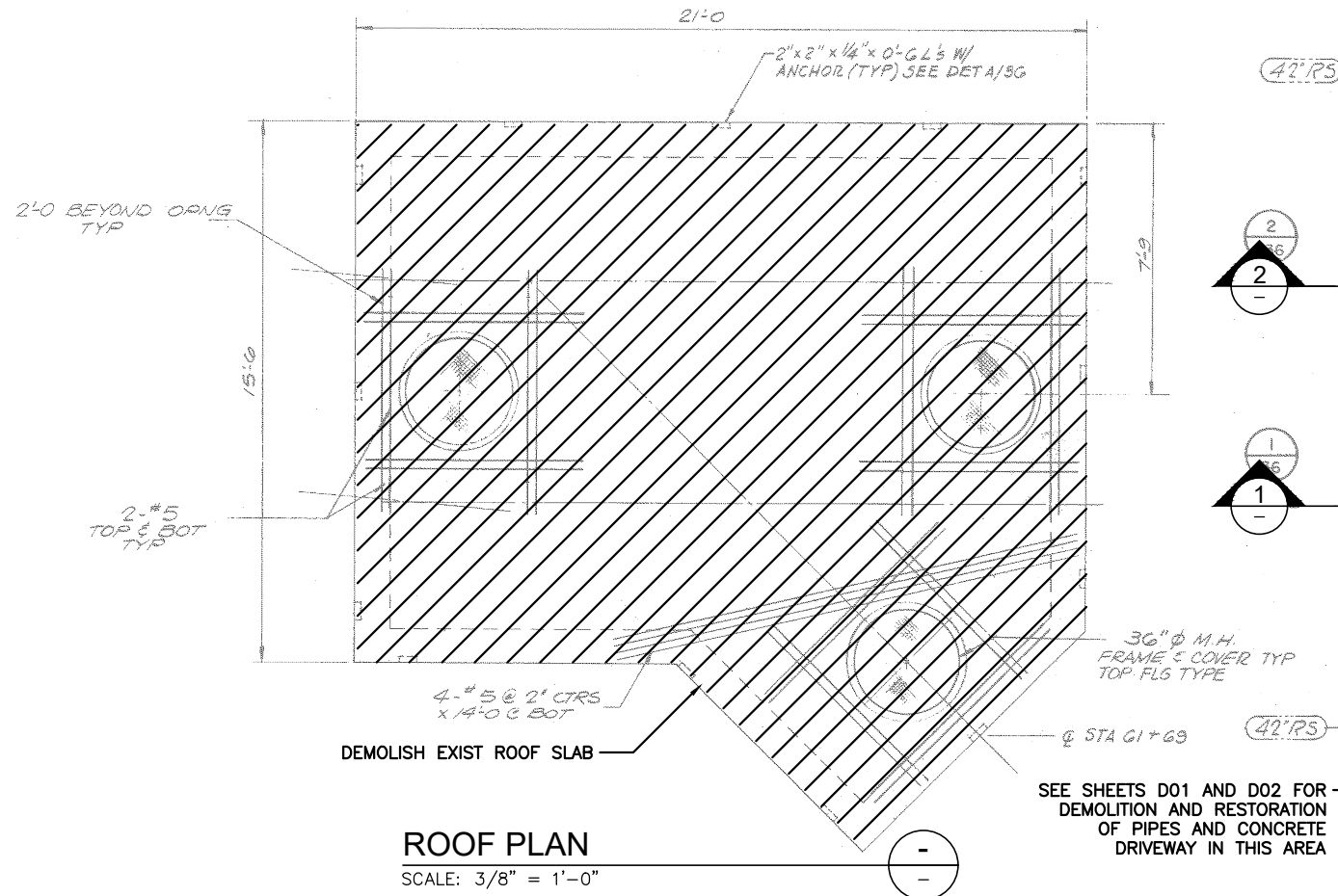
N15 AND N24 STRUCTURES REHABILITATION

N15 STRUCTURAL DETAILS

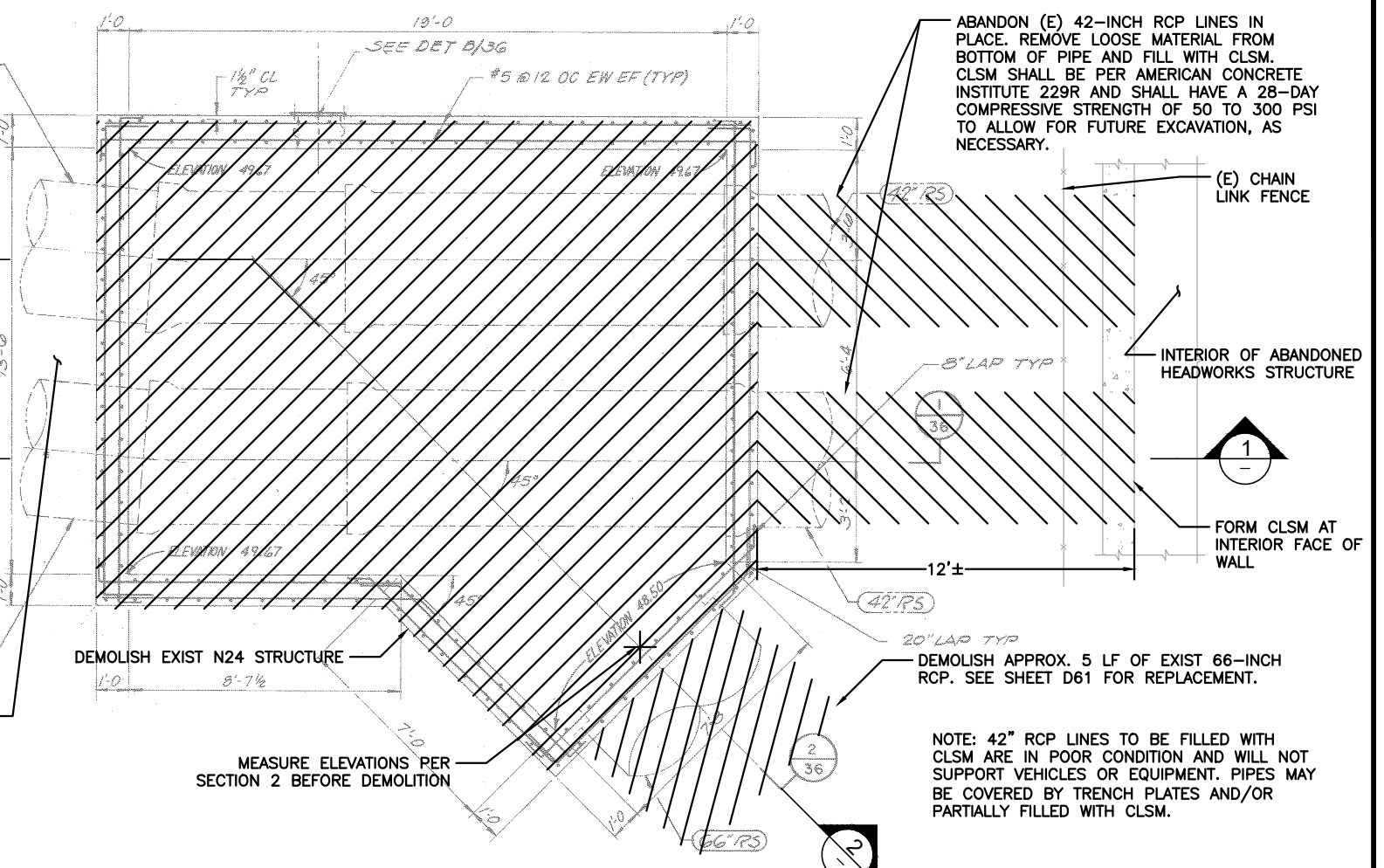
CONTRACT NO. 6011
FILE NAME 18-0244 N24.dwg
DRAWN MDJ
DESIGNED LTZ
CHECKED SNP

SHEET DATE
12/04/2019

SCALE AS SHOWN
DRAWING
D59

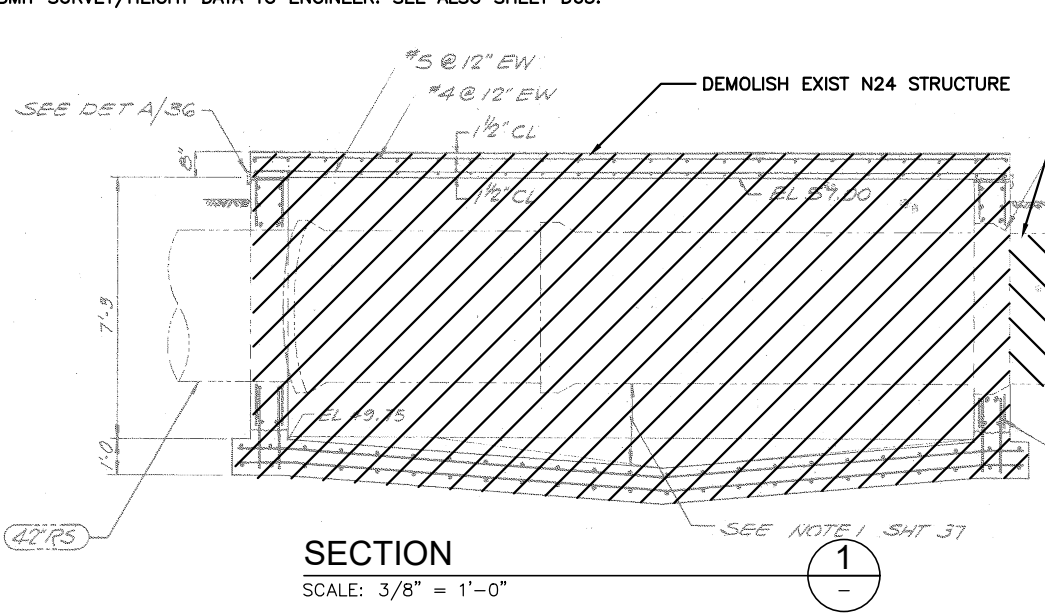


ROOF PLAN
SCALE: 3/8" = 1'-0"

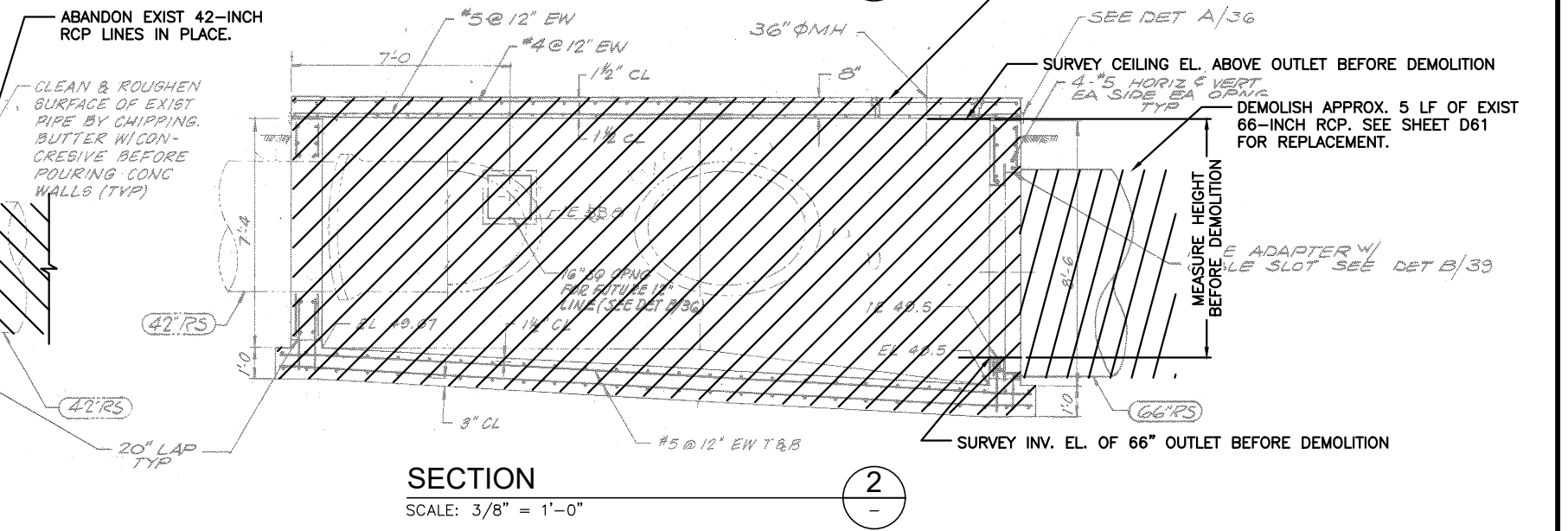


SECTIONAL PLAN
SCALE: 3/8" = 1'-0"

- GENERAL SHEET NOTES:**
1. SURVEY ELEVATIONS PRIOR TO DEMOLITION AS SHOWN IN SECTION 2:
 - 1.1. INVERT OF 66" OUTLET PIPE.
 - 1.2. BOTTOM OF CEILING SLAB ABOVE 66" OUTLET.
 - 1.3. ALSO MEASURE HEIGHT BETWEEN THESE TWO ELEVATIONS DIRECTLY.
 2. SUBMIT SURVEY/HEIGHT DATA TO ENGINEER. SEE ALSO SHEET D63.

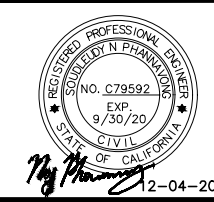


SECTION 1
SCALE: 3/8" = 1'-0"



SECTION 2
SCALE: 3/8" = 1'-0"

REVISIONS			
REV.	DESCRIPTION	BY	DATE



SURVEY	
B.M.:	ELEV.:



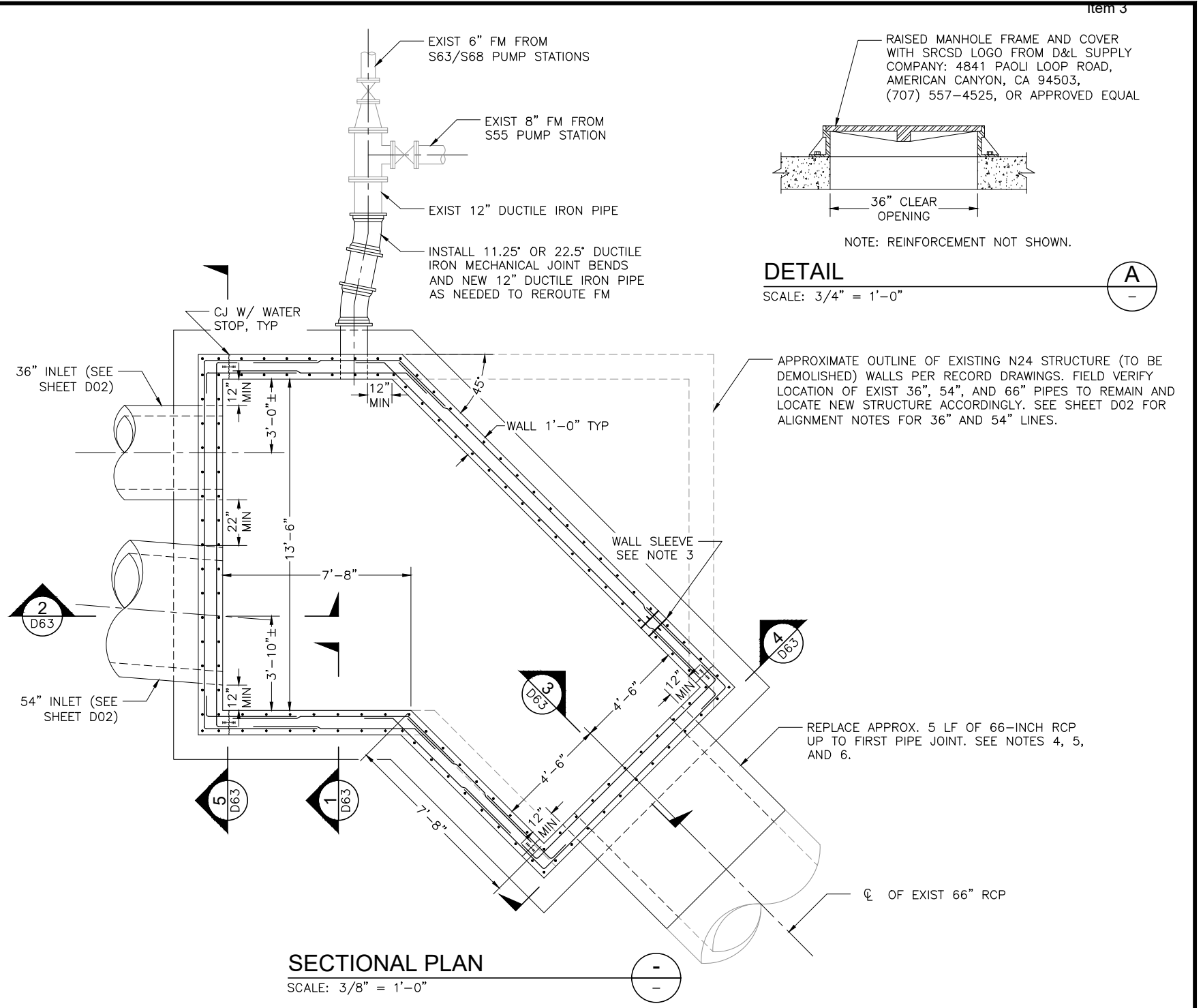
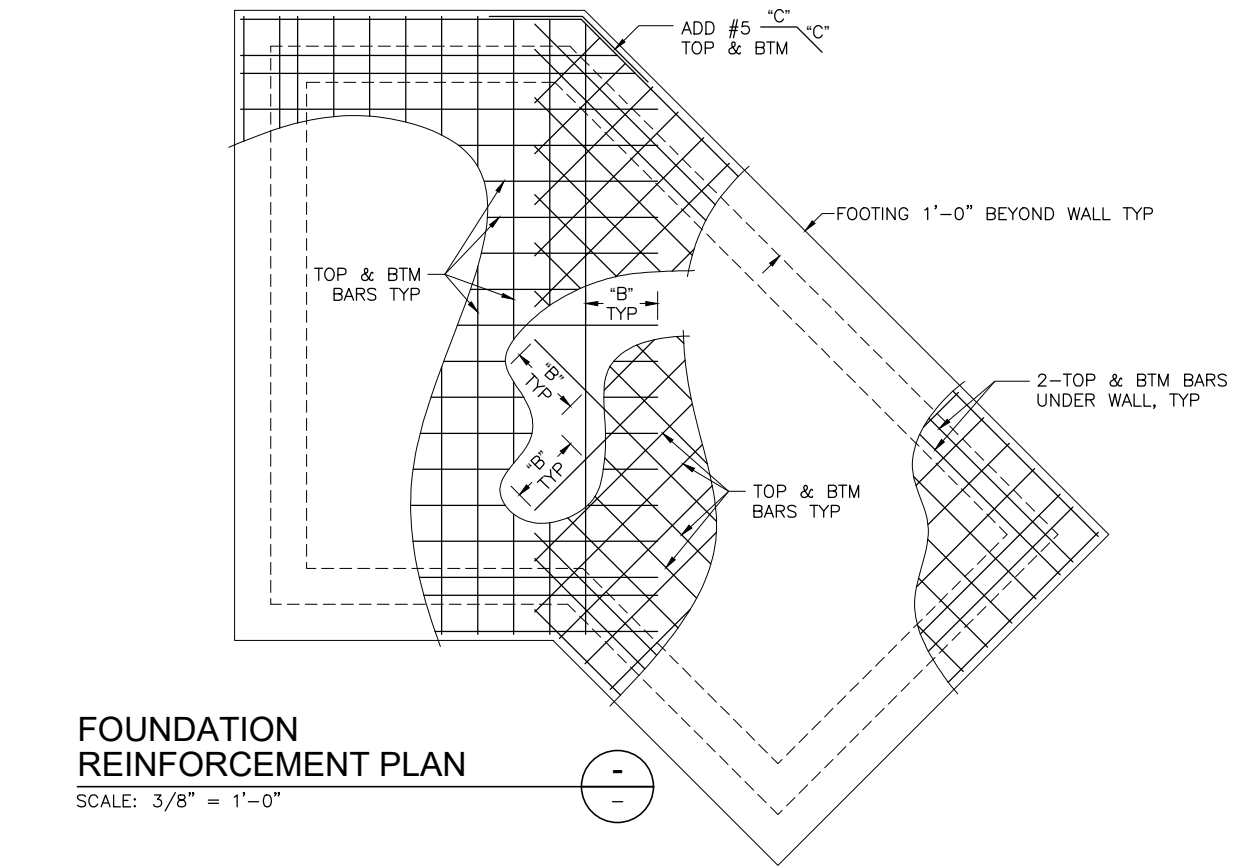
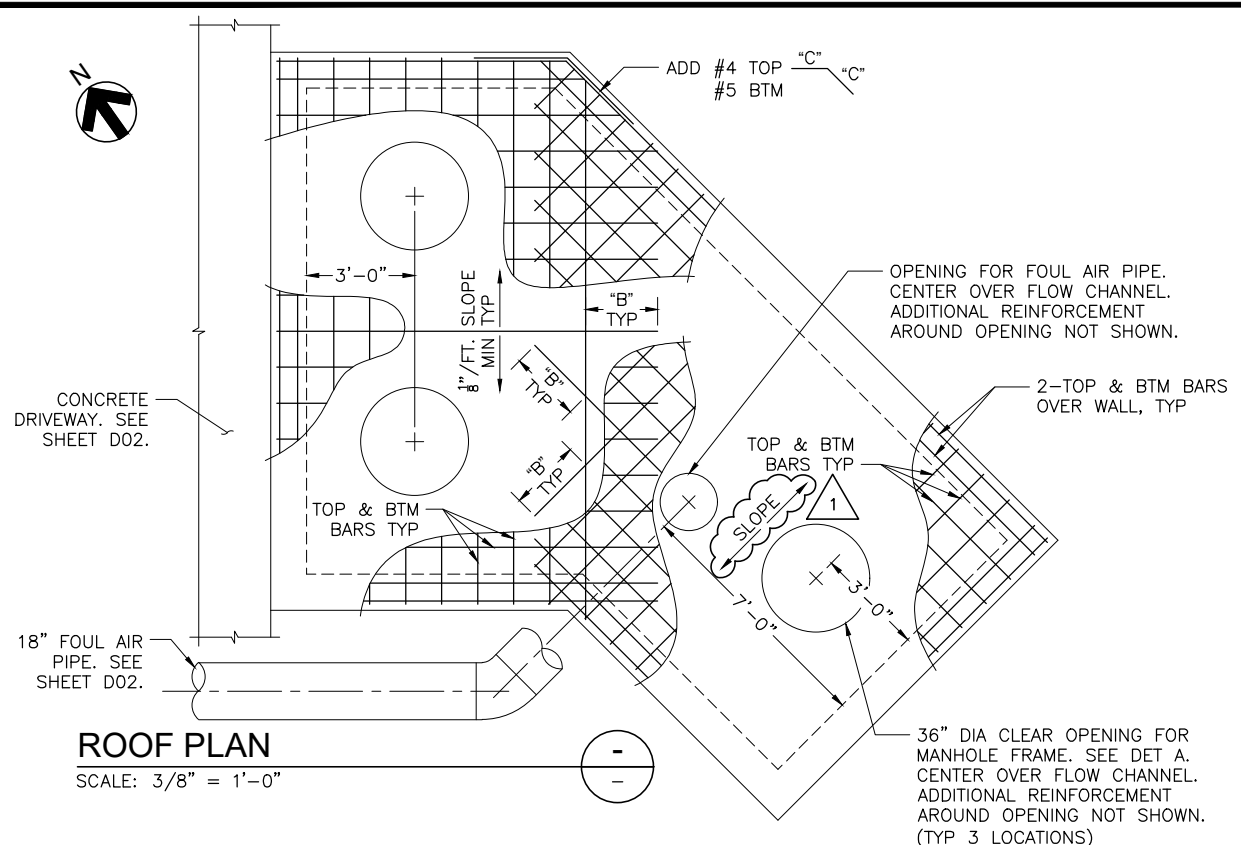
SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT

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Oakland, CA 94607
Tel: (510) 903-6800, Fax: (510) 903-6801
Project No. 18-0244

N15 AND N24 STRUCTURES REHABILITATION

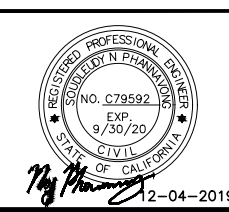
N24 STRUCTURE DEMOLITION PLAN

CONTRACT NO. 6011	SCALE AS SHOWN
FILE NAME 18-0244 N24.dwg	DRAWING
DRAWN MDJ	D60
DESIGNED MDJ	12/04/2019
CHECKED SNP	Page 24 of 55 SHEETS



- GENERAL SHEET NOTES:
- CONCRETE FILL FOR FLOW CHANNELIZATION AND PVC LINING ON WALLS AND CEILING NOT SHOWN FOR CLARITY. SEE SHEET D62. PVC LINING SHALL BE INSTALLED ON CEILING AND FULL HEIGHT OF INSIDE FACE OF EXTERIOR WALLS BEFORE PLACING CONCRETE FILL.
 - SURFACE CONDITIONS AND PAVING THAT ARE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EXISTING CONDITION.
 - PROVIDE SCHEDULE 40, TYPE 316L SS, WALL SLEEVE WITH 2" WATER STOP COLLAR. PROVIDE LINK-SEALS OR APPROVED EQUAL. SIZE FOR FUTURE 3" PVC PIPE. PROVIDE DUMMY PVC PIPE WITH CAP ON ONE END TO PLUG HOLE. ELEVATION OF SLEEVE TO BE APPROVED BY ENGINEER.
 - 66" RCP SHALL CONFORM TO SECTION 15069 AND SHALL MEET OR EXCEED ASTM C76, CLASS III RCP WITH D-LOAD OF 1,350 LBS./LF LOADING TO PRODUCE AN 0.01-INCH CRACK.
 - 66" RCP PIPE JOINTS SHALL HAVE CONTINUOUS RUBBER GASKETS CONFORMING TO THE REQUIREMENTS OF ASTM C443. JOINT SHALL HAVE GROOVED SPIGOT FOR GASKET. JOINT AND O-RING GASKET SHALL BE PER UNITED STATES BUREAU OF RECLAMATION JOINT TYPE R-4.
 - 66" RCP SHALL BE LINED WITH A 360 DEGREE PVC LINER PER SECTION 03163.
- NOTES:

REVISIONS			
REV.	DESCRIPTION	BY	DATE
1	ADDENDUM 2	MDJ	1/29/20



SURVEY	
B.M.:	ELEV.:
DESC.	
PLANS:	F.B.:
PROFILE:	F.B.:
DATUM:	



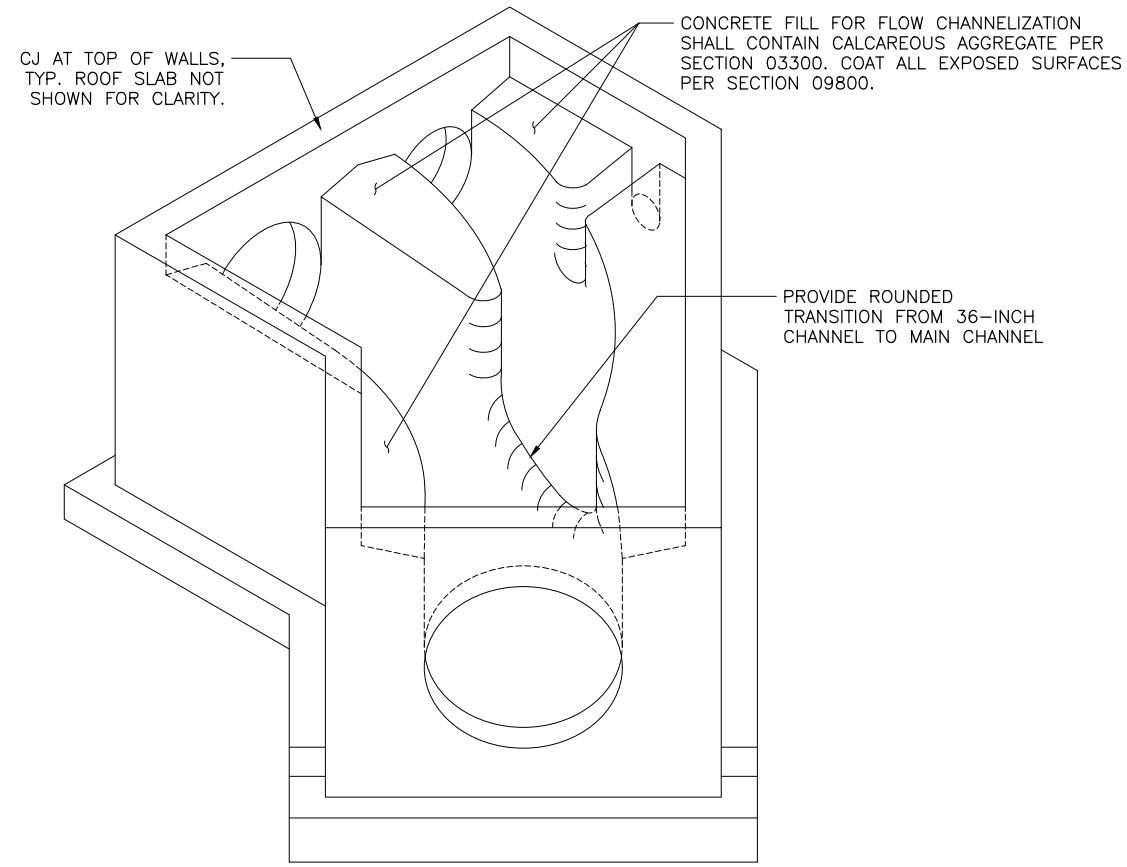
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Project No. 18-0244

N15 AND N24 STRUCTURES REHABILITATION

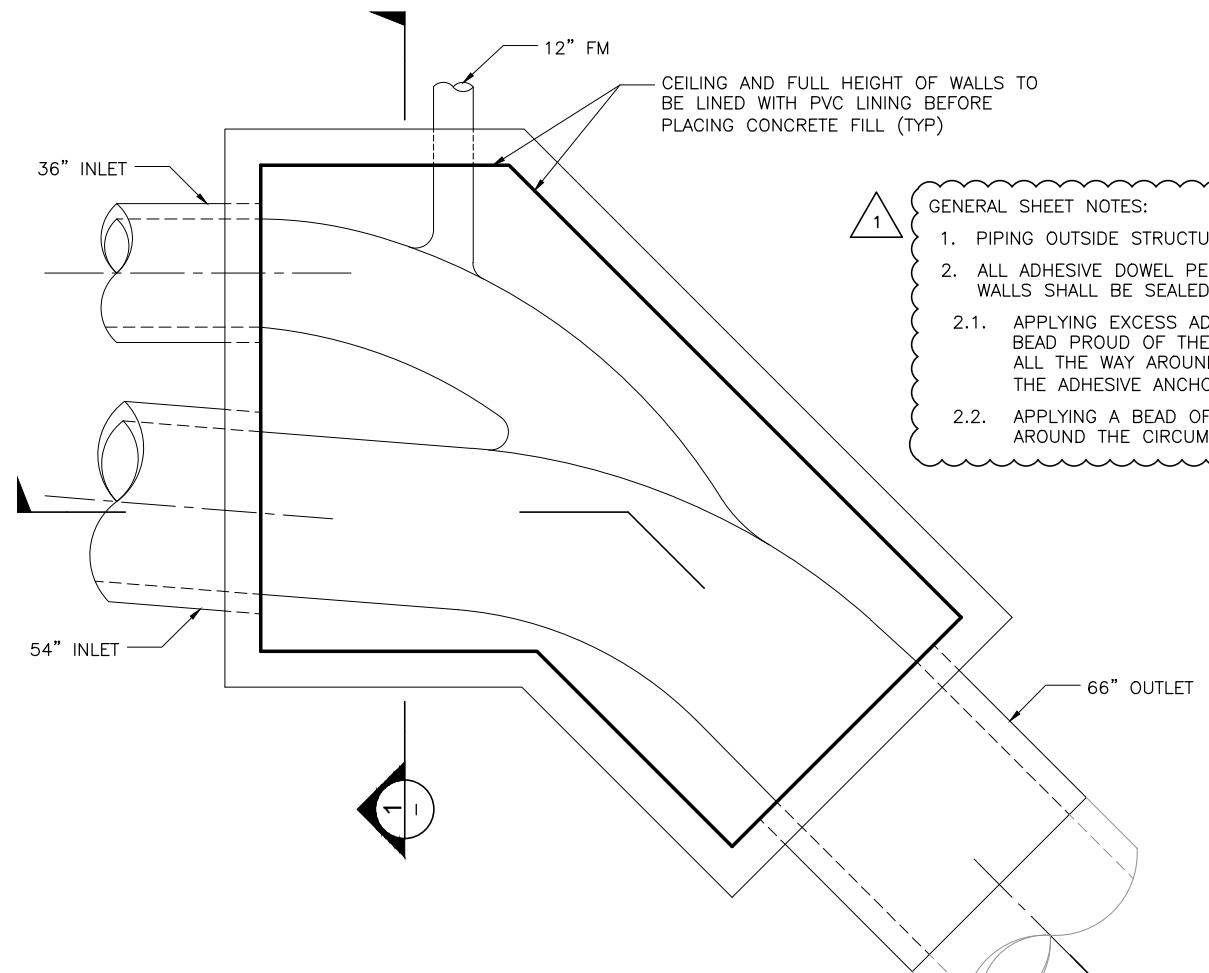
N24 STRUCTURAL AND SITE PLANS

CONTRACT NO. 6011	SCALE AS SHOWN
FILE NAME 18-0244 N24.dwg	DRAWING
DRAWN MDJ	D61
DESIGNED LTZ	51 of 55 SHEETS
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SHEET DATE 12/04/2019	



PERSPECTIVE VIEW

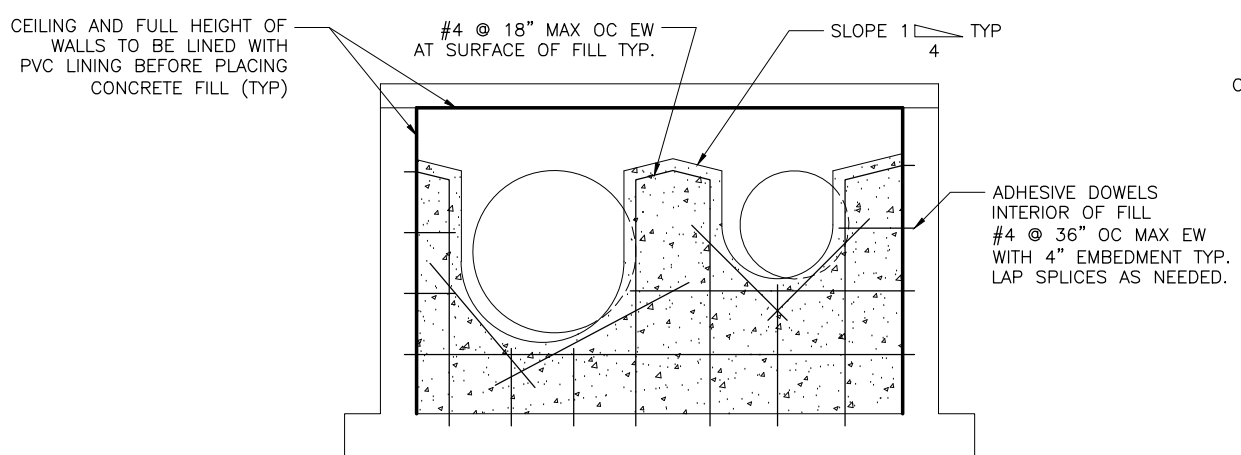
NOT TO SCALE



SECTIONAL PLAN

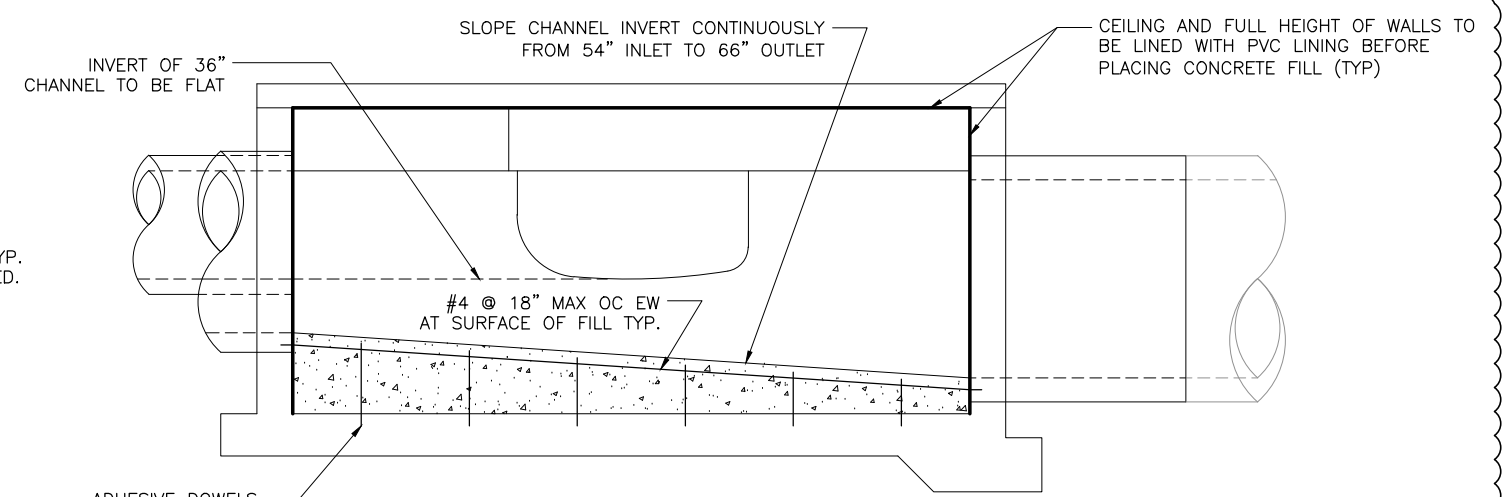
SCALE: 3/8" = 1'-0"

- GENERAL SHEET NOTES:
1. PIPING OUTSIDE STRUCTURE SHOWN ON SHEET D61.
 2. ALL ADHESIVE DOWEL PENETRATIONS THROUGH THE LINING ON THE WALLS SHALL BE SEALED BY EITHER OF THE FOLLOWING METHODS:
 - 2.1. APPLYING EXCESS ADHESIVE SO THAT THE ADHESIVE FORMS A BEAD PROUD OF THE LINING SURFACE AND FORMS A SEAL ALL THE WAY AROUND THE PENETRATION, IF PERMISSIBLE BY THE ADHESIVE ANCHOR MANUFACTURER'S DIRECTIONS, OR
 - 2.2. APPLYING A BEAD OF SIKAFLEX 1A OR APPROVED EQUAL AROUND THE CIRCUMFERENCE OF THE PENETRATION.



SECTION

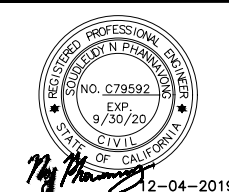
SCALE: 3/8" = 1'-0"



SECTION

SCALE: 3/8" = 1'-0"

REVISIONS			
REV.	DESCRIPTION	BY	DATE
1	ADDENDUM 2	MDJ	1/29/20



SURVEY	
B.M.:	ELEV.:
DESC.	
PLANS:	F.B.:
PROFILE:	F.B.:
DATUM:	



SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT

1000 Broadway, Suite 320
Oakland, CA 94607
Tel: (510) 903-6800, Fax: (510) 903-6801
Project No. 18-0244

N15 AND N24 STRUCTURES REHABILITATION

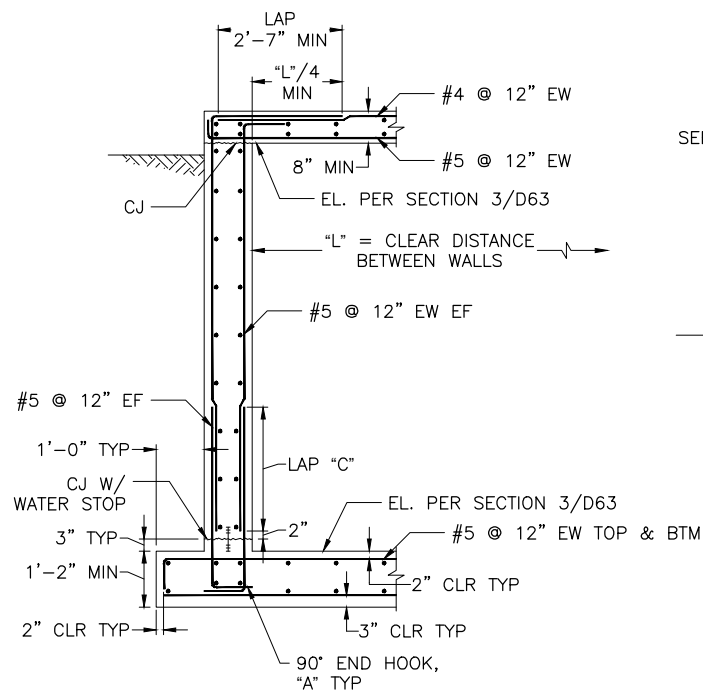
**N24 STRUCTURE
FLOW CHANNEL, COATING,
AND LINING**

CONTRACT NO. 6011
FILE NAME 18-0244 N24.dwg
DRAWN MDJ
DESIGNED MDJ
CHECKED SNP
SHEET DATE 12/04/2019

SCALE AS SHOWN
DRAWING
D62
Page 26 of 55 SHEETS

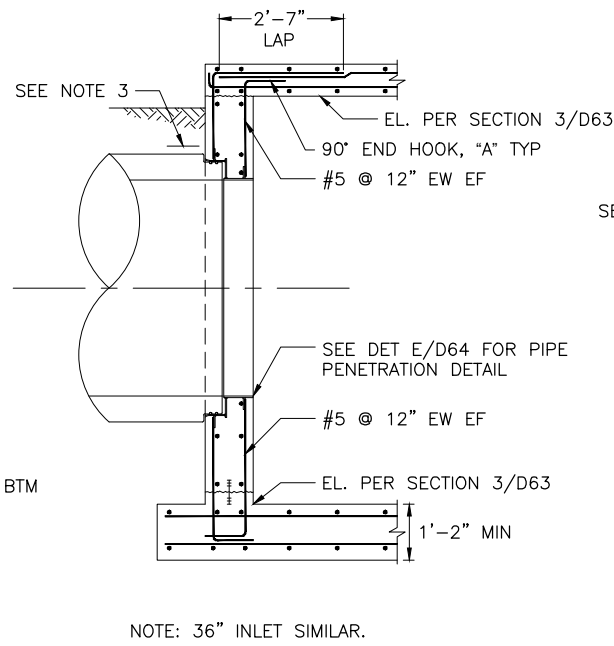
GENERAL NOTES FOR SECTIONS 1-5:

- ELEVATIONS AS DRAWN AND AS DENOTED ARE BASED ON RECORD DRAWINGS FOR EXISTING N24 STRUCTURE AND HAVE NOT BEEN FIELD VERIFIED.
- CONTROL ELEVATIONS FOR NEW N24 STRUCTURE ARE MARKED "**" AND COMPRISE THE INVERT OF THE 66" OUTLET PIPE AND THE BOTTOM OF THE CEILING SLAB ABOVE THE OUTLET.
- CONTRACTOR SHALL SURVEY THESE ELEVATIONS WITHIN THE EXISTING N24 STRUCTURE PRIOR TO DEMOLITION. SEE SHEET D60.
- THESE ELEVATIONS IN THE NEW STRUCTURE SHALL MATCH EXISTING N24 STRUCTURE. IF SURVEY DATA WOULD CHANGE THE HEIGHT OF THE STRUCTURE MORE THAN 1' AS COMPARED WITH SECTION 3/D63, SUBMIT SURVEY DATA AND CONTACT ENGINEER FOR APPROVAL.
- WATER LEVEL FOR FILL TEST PER SECTION 03936 SHALL BE AT LEAST 2" ABOVE OUTSIDE DIAMETER OF ALL CONNECTING PIPES. WATER LEVEL SHALL NOT BE MORE THAN 12" BELOW BOTTOM OF ROOF SLAB.



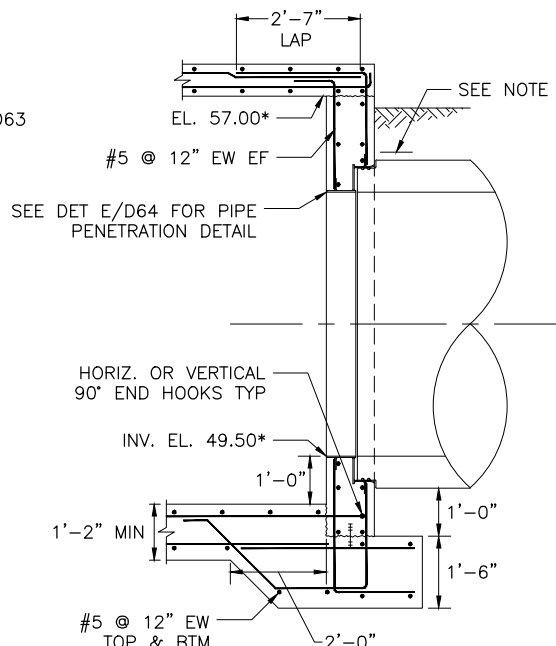
TYP. SECTION
SCALE: 1/2" = 1'-0"

1
D61



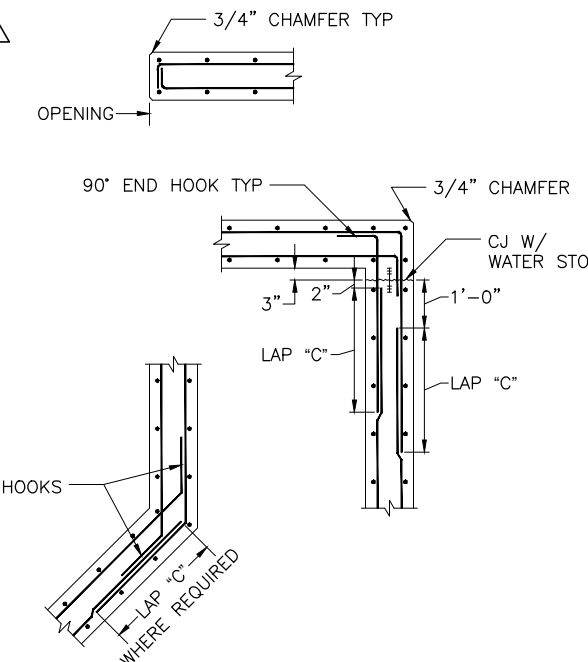
SECTION THRU 54" INLET
SCALE: 1/2" = 1'-0"

2
D61



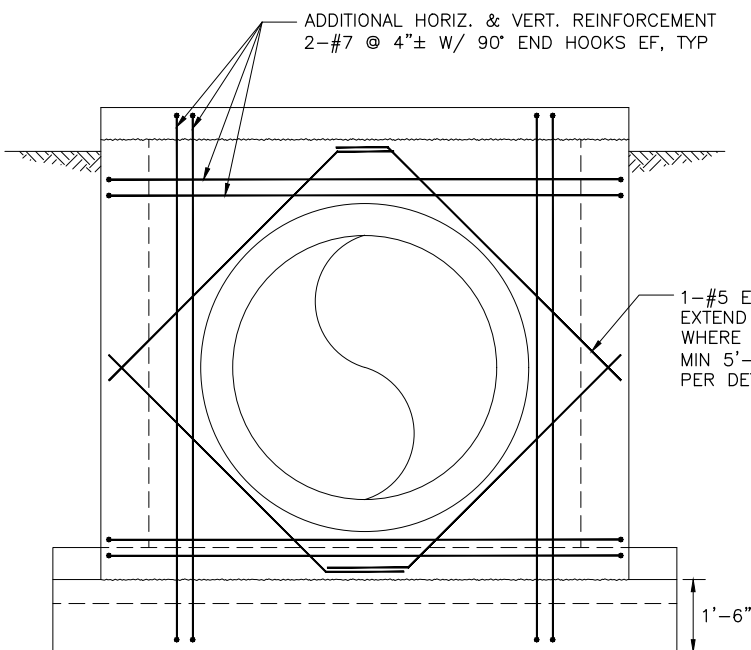
SECTION THRU 66" OUTLET
SCALE: 1/2" = 1'-0"

3
D61



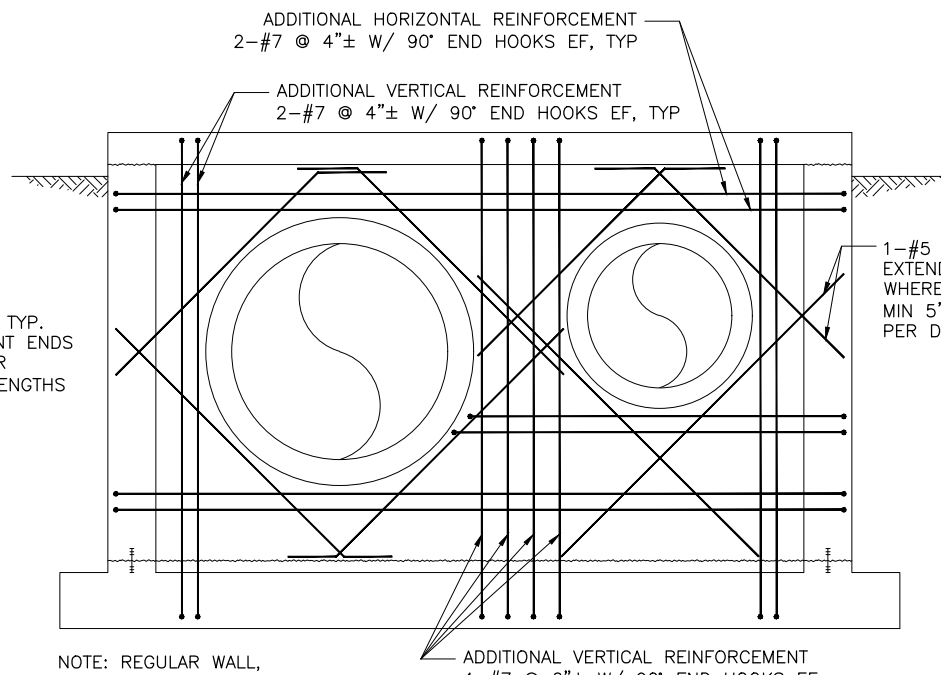
TYP. HORIZ. REINF. AT WALL INTERSECTIONS AND OPENINGS DETAIL
SCALE: 1/2" = 1'-0"

A
-



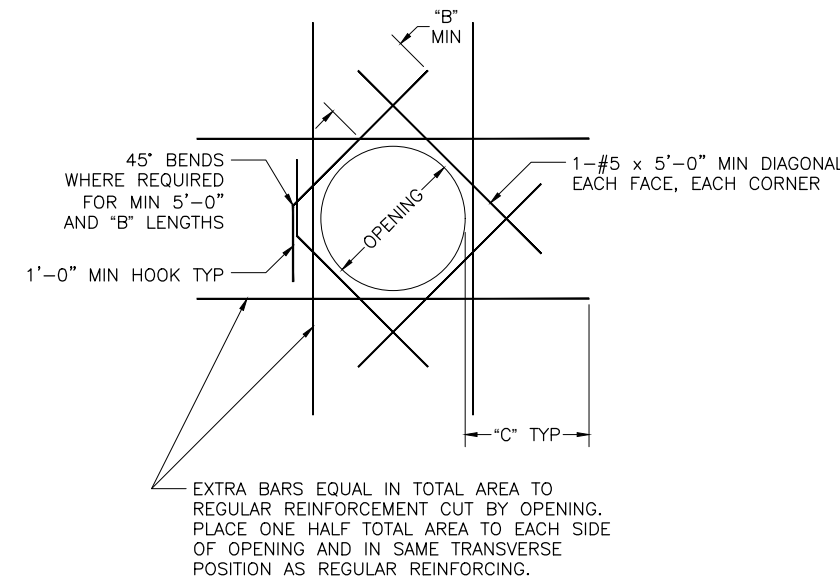
OUTLET WALL SECTION
SCALE: 1/2" = 1'-0"

4
D61



INLET WALL SECTION
SCALE: 1/2" = 1'-0"

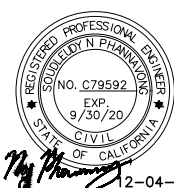
5
D61



ADDITIONAL REINFORCEMENT AT OPENINGS IN WALL AND SLAB DETAIL
N.T.S.

B
-

REV.	DESCRIPTION	BY	DATE
1	ADDENDUM 2	MDJ	1/29/20

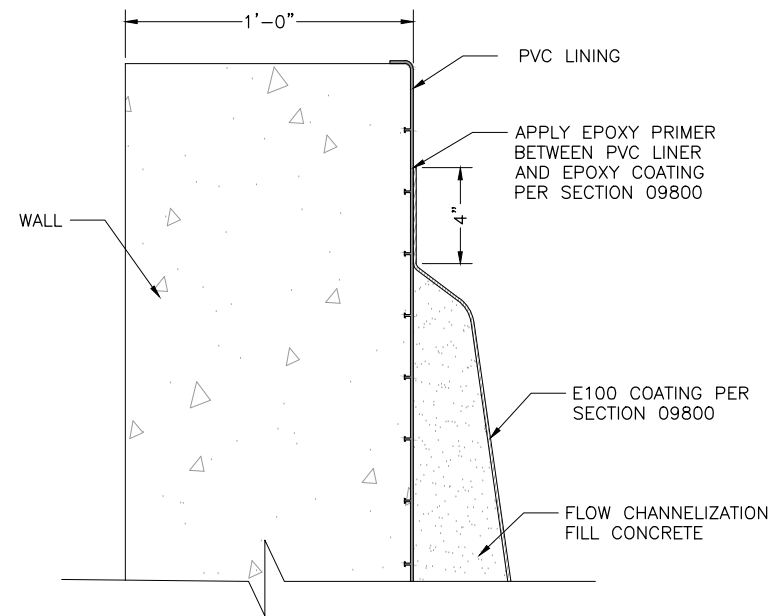


SURVEY	
B.M.:	ELEV.:
DESC.	
PLANS:	F.B.:
PROFILE:	F.B.:
DATUM:	



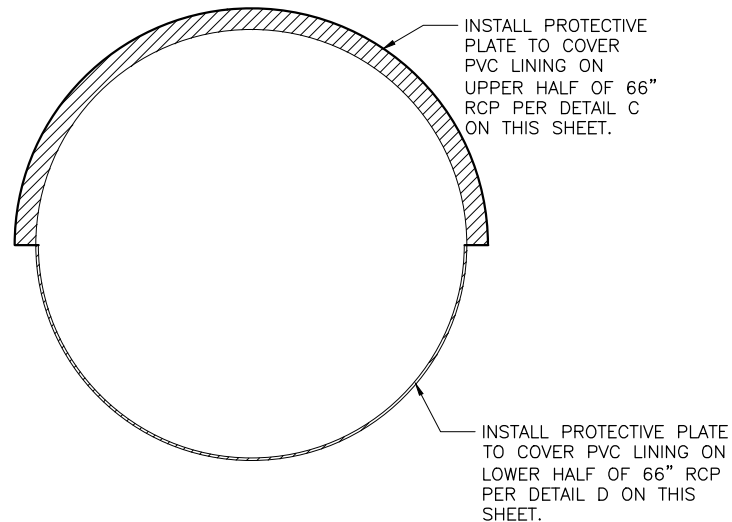
N15 AND N24 STRUCTURES REHABILITATION
N24 STRUCTURAL SECTIONS AND DETAILS

CONTRACT NO. 6011	SCALE AS SHOWN
FILE NAME 18-0244 N24.dwg	DRAWING
DRAWN MDJ	D63
DESIGNED LTZ	12/04/2019
CHECKED SNP	Page 27 of 55 SHEETS



TYPICAL EPOXY COATING TERMINATION ON PVC LINING

SCALE: 3" = 1'-0"

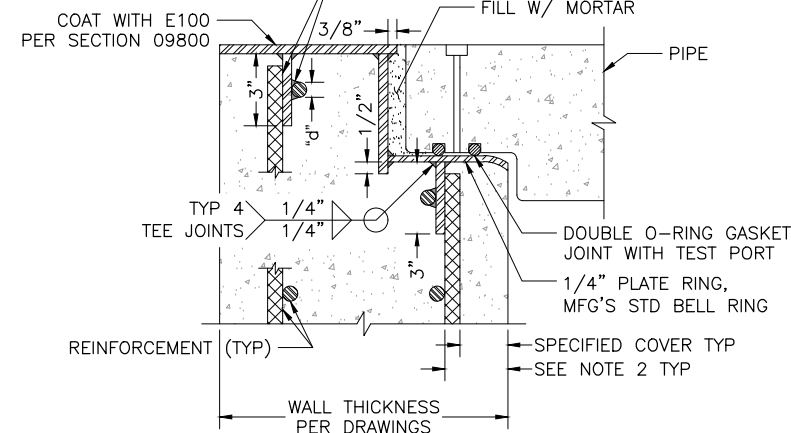


PROTECTIVE PLATE DETAIL

SCALE: NTS



TYP ALL CUT BARS > 0.33d (SEE NOTE 9)
SEE NOTE 1 0.33d (SEE NOTE 9)

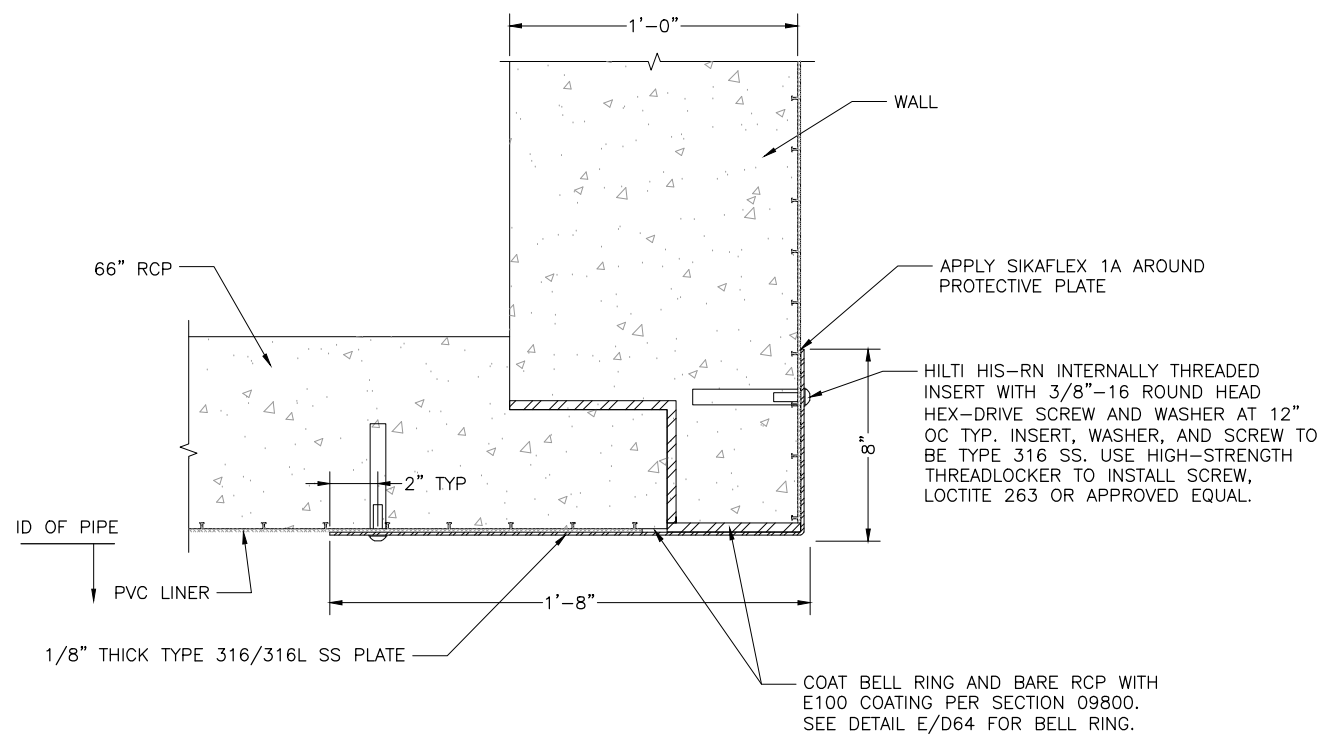


NOTES:

1. WELD ALL CUT REINFORCING BARS TO ANNULAR RINGS PER AWS D1.4. WELDED BARS MUST MEET ASTM A706.
2. SET ANNULAR RINGS BACK FROM ENDS OF ASS'Y BY REINFORCING STEEL CLEAR COVER PLUS DIAMETER OF OUTSIDE BARS.
3. GRIND SMOOTH ALL METAL EDGES IN AREAS TO BE COATED AND ALL SURFACES IN PIPE SEATING AREA.
4. RING SHALL HAVE SPIDER BRACING INSTALLED AT POINT OF MANUFACTURE.
5. CONTRACTOR SHALL PROVIDE BELL RING INSERT.
6. PROTECTIVE PLATE PER DETAILS B, C, AND D NOT SHOWN.
7. ALL PLATES 3/8" THICK UNLESS NOTED OTHERWISE.
8. SHAPE AND SIZE OF PIPE SPIGOT SHALL BE VERIFIED BY CONTRACTOR PRIOR TO FABRICATION OF BELL RING.
9. 1 1/2" FOR #4 BARS; 2" FOR #5 BARS; 2 1/2" FOR #6 BARS; 3" FOR #7 AND LARGER BARS.

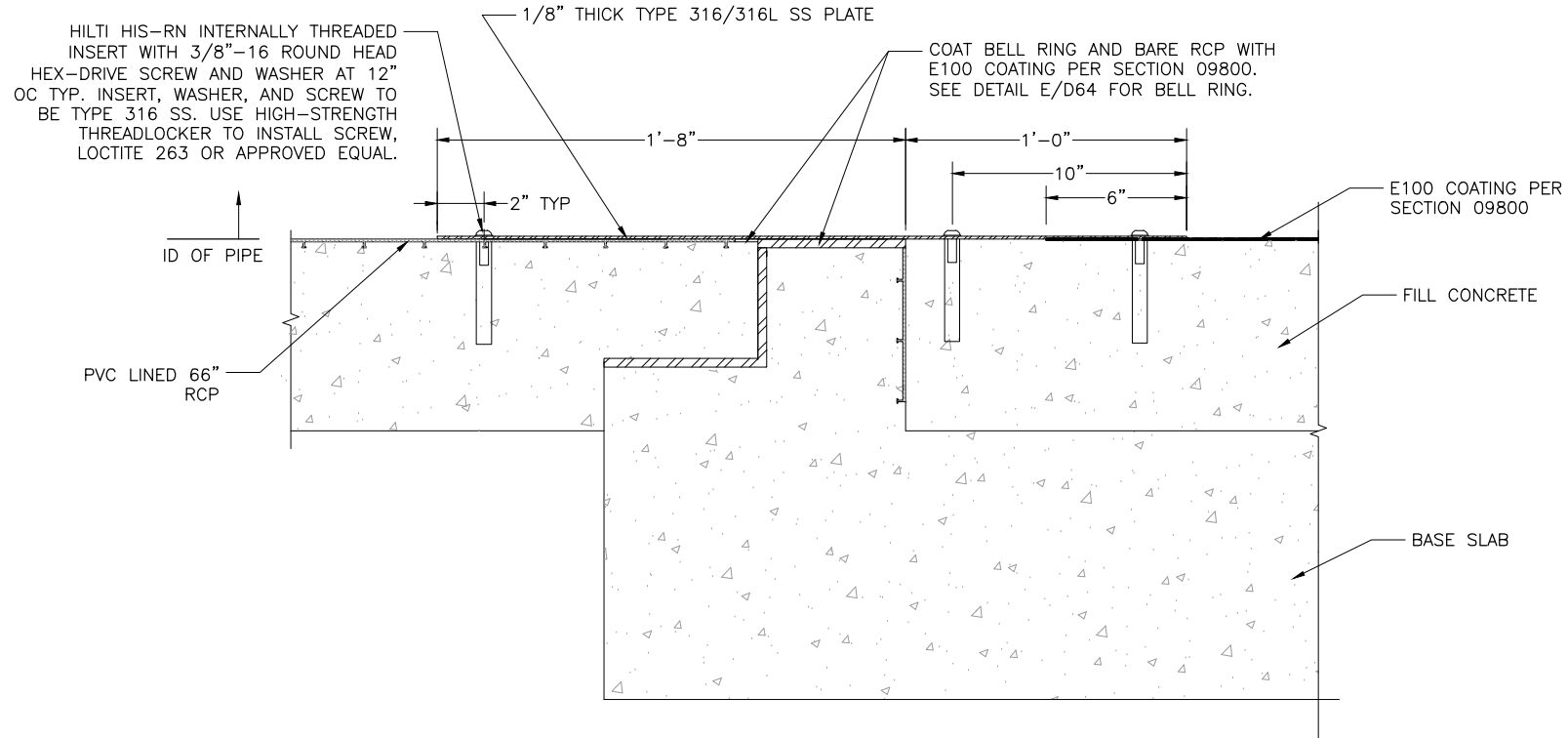
DETAIL

SCALE: N.T.S.



UPPER OUTLET PIPE TRANSITION PROTECTIVE PLATE DETAIL

SCALE: 3" = 1'-0"

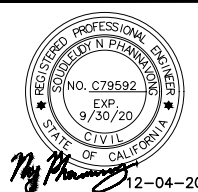


LOWER OUTLET PIPE TRANSITION PROTECTIVE PLATE DETAIL

SCALE: 3" = 1'-0"



REVISIONS			
REV.	DESCRIPTION	BY	DATE
1	ADDENDUM 2	MDJ	1/29/20



SURVEY	
B.M.:	ELEV.:
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PLANS:	F.B.:
PROFILE:	F.B.:
DATUM:	

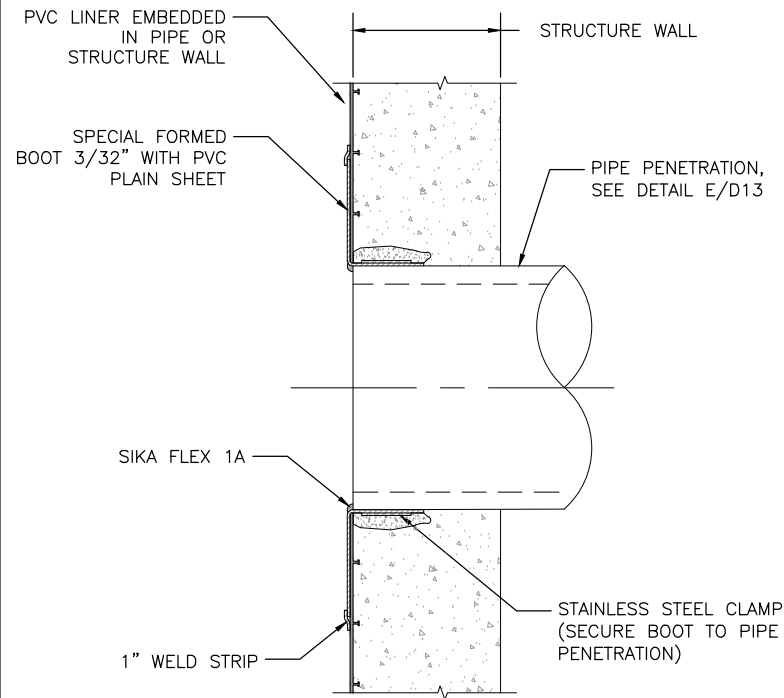


SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT

N15 AND N24 STRUCTURES REHABILITATION

N24 DETAILS

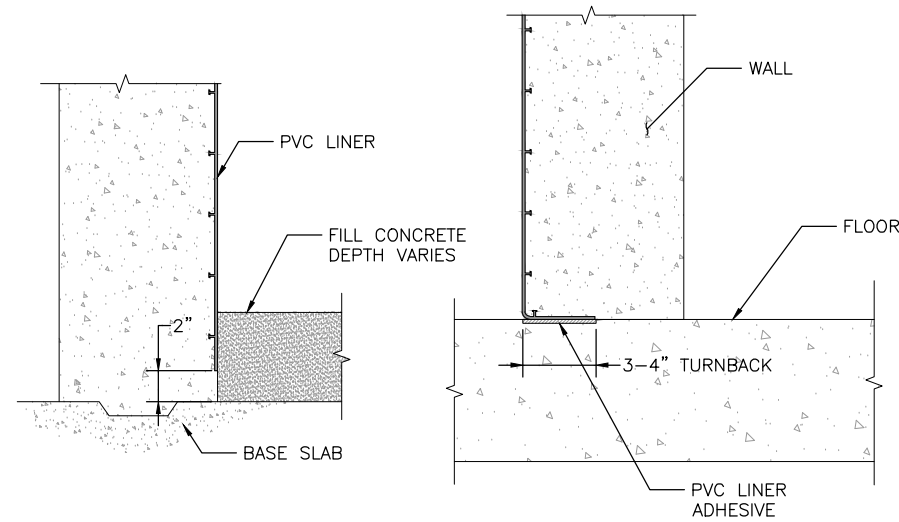
CONTRACT NO. 6011	SCALE AS SHOWN
FILE NAME 18-0244 N15.dwg	DRAWING
DRAWN SPS	D64
DESIGNED SNP	
CHECKED GHW	
SHEET DATE 12/04/2019	Page 48 of 55 SHEETS



SEALING PIPE PENETRATIONS THRU PVC LINED WALL/ROOF

NTS

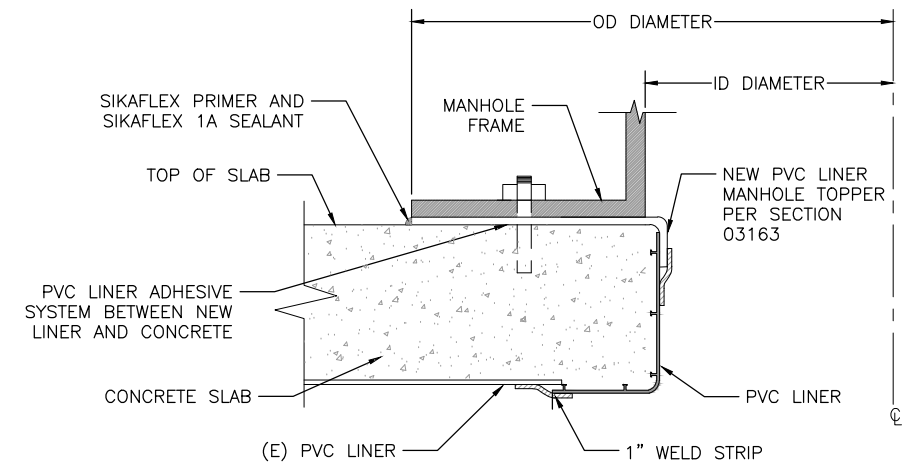
1



TERMINATION OF PVC LINER AT CONCRETE WALL OR UNLINED FLOOR

NTS

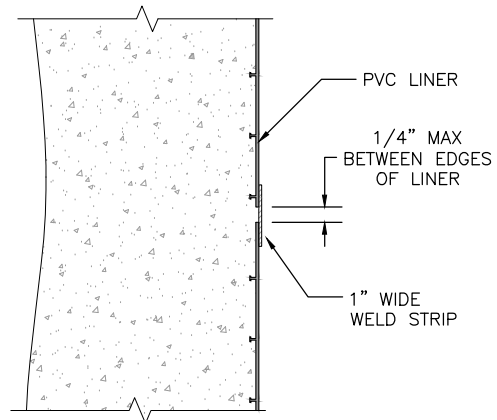
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LINING TERMINATION AT ACCESS MANHOLE

SCALE: NTS

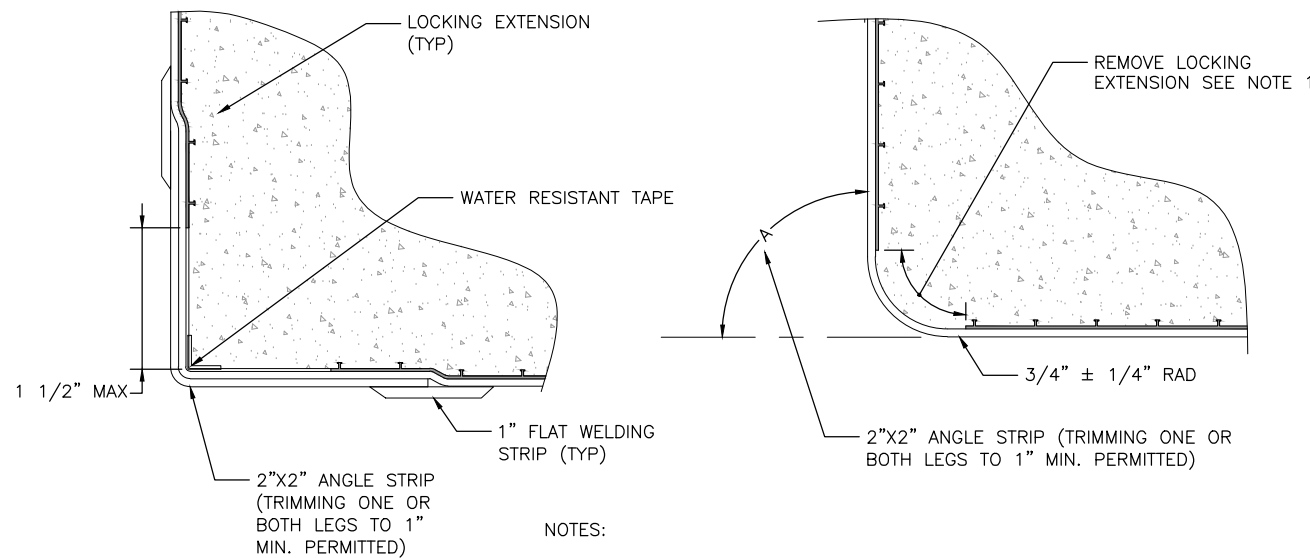
3



TERMINATION AT JOINT

SCALE: NTS

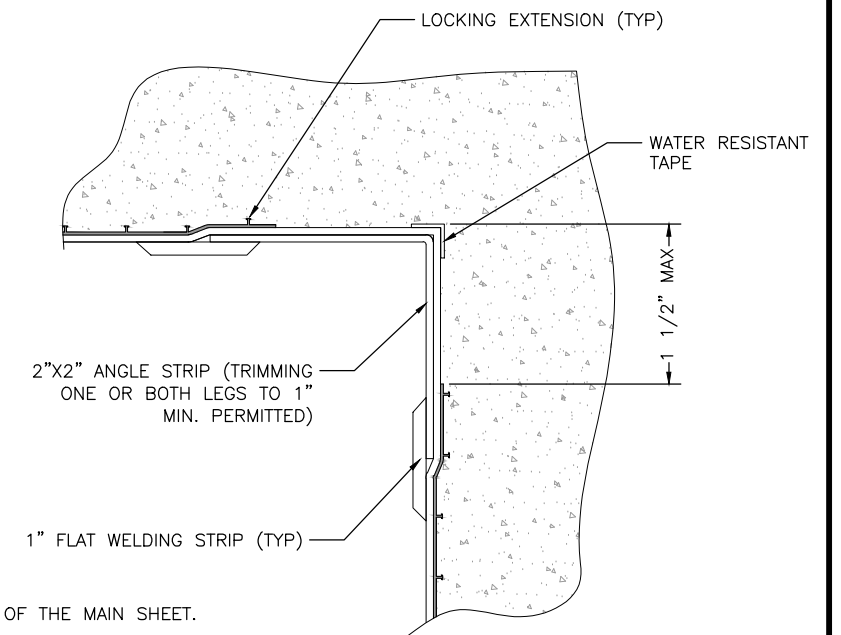
4



PVC LINER CORNER DETAIL

NTS

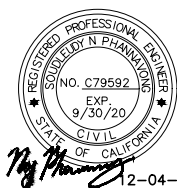
5



NOTES:

1. THE LOCKING EXTENSIONS SHALL BE REMOVED TO WITHIN 1/32" OF THE FACE OF THE MAIN SHEET.
2. SHEET MUST BE ABOVE 50°F TO PERMIT BENDING AND HIGHER TEMPERATURES ARE RECOMMENDED TO IMPROVE HANDLING.

REVISIONS			
REV.	DESCRIPTION	BY	DATE



SURVEY	
B.M.:	ELEV.:



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Project No. 18-0244

N15 AND N24 STRUCTURES REHABILITATION

N24 COATING AND LINING DETAILS

CONTRACT NO. 6011	SCALE AS SHOWN
FILE NAME 18-0244 N15-N24.dwg	DRAWING
DRAWN SPS	D65
DESIGNED SNP	55 OF 55 SHEETS
CHECKED GHW	Page 20
SHEET DATE 12/04/2019	