MEDIO CREEK WRC FILTER AND UV SYSTEM IMPROVEMENTS PROJECT
Solicitation Number: CO-00226
Job No.: 18-6505

ADDENDUM 1

Date November 7, 2018

To Bidder of Record:

This addendum, applicable to work referenced above, is an amendment to the bid proposal, plans and specifications and as such will be a part of and included in the Contract Documents. Acknowledge receipt of this addendum by entering the Addendum number and issue date on the space provided in submitted copies of the bid proposal.

RESPONSES TO QUESTIONS RECEIVED

1. Section 26 29 23 – General. Please confirm if the filter backwash pump VFD provided within the AquaDisk control panel is required to be in complete conformance to definition of this section. Aqua typically would provide a "compact" VFD (Allen Bradley model 525) with a face mounted controller, and input/output line filters in order to comply with the general intent of this section. If this is acceptable, please clarify this point within the filter section of the specifications. Full conformance to Section 26 29 23 would most likely require VFDs that would need to be mounted outside of the filter control panels.

Response: A compact VFD (Allen Bradley model 525) will be sufficient in lieu of a VFD in full conformance with Section 26 29 23.

2. Ref Plan Page M-02. On the 3" Drain Line there is a 3" Drain Ball Valve. Please provide a specification for this valve. It is drawn like a gate valve. Can you please verify if it is a ball valve or a gate valve?

Response: Provide 316 Stainless Steel ball valves with FNPT X FNPT connection, PTFE Seal, full port, quarter turn w/ locking lever, conforming to ASTM A351.

3. Reference Plan Page M-01 & M-03. Is the 20" Discharge Piping inside the wet well (as shown on Section 1/M- 03) new for all three pumps? The plan view on page M-01 appears that it is only the north pump that is having new piping replaced in the wet well.

Response: The 20" discharge piping inside the wet well is only new for one pump, the most northern pump. The other pumps piping shall remain in place and be reutilized.

4. Drawing M-04: Please adjust the channel & water elevations as follows:

- **Channel floor should be 709.70'**
- **Elevation post level control ramp should be 709.38'**
- **Channel Width for Banks should be 2'-8" and not 2'-8.5"**

Response: See updated drawing M-04.

5. Specification 46 66 56-6 Section 1.6 C.1: Equipment storage and protection should be by contractor.

Response: Equipment shall be delivered, stored, and protected in accordance with Specifications 01 65 00 and 01 66 00.

6. Specification 46 66 56-8 Section 2.1 C.3.c: Please confirm that the system design UV dose of 30 mJ/cm2 is based

on the 2003 NWRI Guidelines.

Response: See updates to Specification 46 55 56 indicated below.

7. Specification 46 66 56-8 Section 2.3 A.1.f The maximum water surface upstream of UV Banks will be 2.18 ft and not 2.17 ft.

Response: See updates to Specification 46 55 56 indicated below.

8. Specification 46 66 56-8 Section 2.3 A.1.g: The nominal water surface elevation downstream of UV Banks shall be 711.58 (not 711.53) assuming the bottom of channel is set at 709.70.

Response: See updates to Specification 46 55 56 indicated below.

9. Specification 46 66 56-8 Section 2.3 A.3.b: The power Distribution Centers power will be 12.3 kVA and not 10.8 kVA.

Response: 12.3 kVA is acceptable. See updates to Specification 46 55 56 indicated below.

10. Specification 46 66 56-8 Section 2.3 A.4.b: HSC power should be 2.5 kVA and not 0.5 kVA.

Response: 2.5 kVA is acceptable. See updates to Specification 46 66 56 indicated below.

10. Specification 46 66 56-8 Section 2.4 A.5.b: System Control Center power should be 3.0 kVA and not 0.15 kVA.

Response: 3.0 kVA is acceptable. Refer to revision on Sheet E-24 and to the revised specification.

11. Specification 46 66 56-13 Section 2.3 J.2.b.3.a: States to provide Redundant Control Logix PLC's. Please confirm if

- **A spare PLC loaded and pre-programmed can be provided as a spare part in lieu of a full redundant hot PLC?**
- **If hot redundancy is not required then can a CompactLogix PLC model be used in lieu of the ControlLogix PLC. If not please confirm the ControlLogix PLC model required.**
- **Our PLC program is developed using RsLogic 5000 and not Studio 5000. Please confirm that RsLogic for the PLC code development is acceptable.**

Response: Neither a spare PLC nor a redundant PLC is required. UV manufacturer shall instead supply the PLC program on an SD card or a USB card and turn over to the Owner after startup and testing with the latest program downloaded. See updates to Specification 46 66 56 indicated below. A CompactLogix PLC can be used in lieu of a ControlLogix. The only requirement is that the CompactLogix PLC must include individual I/O modules, not be a built-in, all in one PLC. Studio5000 shall be used for program development as specified.

12. Specification 46 66 56-13 Section 2.3 J.2.b.d: Redundant I/O racks. Confirm if this option is required as it is typically not required. If it is please confirm if the 1715 series line from Allen Bradley is acceptable and if not confirm the specific redundant rack model required?

Response: Redundant I/O racks are not required. See updates to Specification 46 66 56 indicated below.

13. Specification 46 66 56-13 Section 2.3 J.2.c.2: We utilize Factory Talk for the HMI development and not Studio 5000. If the Studio 5000 is required we would need to re-develop the HMI code as a conversion program is not available to convert from Factory Talk to Studio 5000. Please confirm if using Factory Talk for the HMI development is acceptable.

Response: FactoryTalk in lieu of Studio 5000 may be used for programming the HMI for the UV system vendor provided panel.

14. Specification 46 66 56-16 Section 2.8 A: Please confirm if AB RsLogic is acceptable in lieu of using AB Studio 5000.

Response: Studio5000 shall be used for PLC program development as well as OIT program development as specified.

15. Specification 46 66 56-16 Section 2.8 A: Please confirm if multiple electronic copies of the program is acceptable instead of paper copies as these can be hundreds of pages in length and very difficult to read.

Response: Multiple electronic copies of the program is acceptable in lieu of hardcopies. Include as part of the O&M manual as well.

16. Specification 46 66 56-16 Section 2.8 C.2: Please confirm if the UV PLC is to perform the flow calculation or will this be performed by the plant SCADA system.

Response: The flow calculation shall be performed by the UV PLC.

17. Specification 46 66 56-17 Section 2.8 C.2.2: In the manual 'ON' position the lamps will operate at 100% power and are not adjustable as this mode by-passes the PLC.

Response: This is acceptable.

18. Specification 46 66 56-19 Section 3.2: To be performed by 'Installation Contractor '.

Response: Field installation is to be done by Contractor under supervision of UV Manufacturer as specified in Section 46 66 56-3.3.A.

19. Specification 26 29 86 Section 2.3 B.1.c: Please confirm if rotary style disconnect is acceptable in lieu of the cable driven operating mechanism.

Response: Rotary style disconnect is acceptable in lieu of cable driven operating mechanism.

20. Please provide a UV channel effluent level control gates specification.

Response: Automatic level control gates shall be provided as indicated in specification 46 66 56-2.1.C.1. Gates shall be constructed entirely of type 304 or 316 Stainless Steel. Gates shall be designed to automatically maintain the water level as specified and shall not utilize any mechanical components beyond adjustable weights. Gates shall be installed in place of the existing automatic level control gates.

MODIFICATIONS TO THE SPECIFICATIONS

1. Section 46 66 56 – Open Channel Ultraviolet Disinfection Equipment

Replace Section 46 66 56-1.3.A.1 as follows:

"1. UV Disinfection Equipment Supplier shall submit MS2 phage bioassay evaluations for the proposed reactor. Bioassay evaluations shall have been performed by an independent third party in accordance with the NWRI 2003 Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse (2nd Edition), without exception. The bioassay reports shall demonstrate that the proposed UV system design and the number of lamps will deliver the dose specified in Paragraph 2.1.
a. The bioassay must follow, and present minimum standards as outlined in TCEQ §217.296(b) in the report.
b. The system must also be validated in accordance with the requirements set forth in the NWRI 2012 Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse."

Replace Section 46 66 56-1.3.A.2 as follows:

"2. UV Disinfection Equipment Supplier shall submit independent certification of sleeve fouling factor and lamp aging factors. Independent certification shall be based on protocols described in NWRI, 2003 Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse."

Replace Section 46 66 56-2.1.A.1.f as follows:

"f. The maximum water surface upstream of UV Banks at the Maximum Design Flow Rate shall not exceed 2.18 ft. from channel invert."

Replace Section 46 66 56-2.1.A.1.g as follows:

"g. The nominal water surface downstream of UV Banks at all flow conditions shall be set at 711.58 ft. msl. (Level maintained by automatic level control gate)."

Replace Section 46 66 56-2.1.B.2.a as follows:

"a. Total Suspended Solids: 10 mg/L (30 mg/L Max Daily)

Replace Section 46 66 56-2.3.A.3.b as follows:

"b. Power Requirements: 12.3 kVA"

Replace Section 46 66 56-2.3.A.4.b as follows:

"b. Power Requirements: 2.5kVA"

Replace Section 46 66 56-2.3.A.5.b as follows:

"b. Power Requirements: 3.0 kVA"

Replace Section 46 66 56-2.3.J.2.b.3).a) as follows:

"a) ControlLogix processors, compatible with AB Studio 5000 programming software."

Remove Section 46 66 56-2.3.J.2.b.3).d) in its entirety.

~~**"d) Redundant I/O Racks including:**~~

~~**(1) Digital input/output (I/O) modules. Provide digital I/O as required to perform all specified UV system functions. For PLC outputs to coils, provide surge suppressors at the terminal blocks. Provide additional digital I/O modules as required to provide 25% of the total I/O as spares for future use.**~~
~~**(2) Analog input/output modules. Provide analog I/O as required to perform all specified UV system functions. Provide additional analog I/O modules as required to provide 25% of the total I/O as spares for future use."**~~

MODIFICATIONS TO THE PLANS

1. Sheet D-03, Replace the sheet with the attached.
   a. Detail 4 - Updated to clarify that pipe supports are additionally to be removed.

2. Sheet M-04, Replace the sheet with the attached.
   a. Details updated to include a second baffle wall as well as extension of the existing 6" MLSS return drain line through new grout fill.

3. Sheet I-03,
   a. Modify tag for the 12 strand fiber between the Network Panel NET-15 and the Building 18 UV Control Panel to read "FOC-UV".

4. Sheet E-05,
   a. On MCC-FLT One-line Diagram circuit 16, do not demolish (do not hatch) breaker. This will remain as a spare. Remove keynote 2, next to the circuit.

b. In Elevation View, do not demolish (do not hatch) bucket #9.

5. Sheet E-08,

a. Conduit VFD-3C, between the VFD and the Inlet Pump P-3 field devices, change wire to 12#14, #14G in 2"C.

6. Sheet E-09,

a. On the plan view, change both ductbank continuation sheet references from E-04 to E-10.

7. Sheet E-10,

a. In Ductbank Section A, change conduit size for Conduit No.1 to 2".
b. In Ductbank Section B, change conduit size for Conduit No.1, No.2, and No.4 to 2".
c. Modify note 1 to read " REFER TO SHEET E-13 FOR TYPICAL FILTER ENLARGED VIEW."

8. Sheet E-13, Replace the sheet with the attached.

a. Modified conduits from backwash valves to the Filter Control Panel. Added power conduit for each valve in addition to the controls conduit.

9. Sheet E-14, Replace the sheet with the attached.

a. Modified conduits from backwash valves to the Filter Control Panel (typical of all three filters). Added power conduit for each valve in addition to the controls conduit. Also increased control wire count for each valve.

10. Sheet E-15,

a. In Low Level Lockout Control Schematic B, Ladder Line 20, change the three CR-L2 contacts from normally open to normally closed contacts to the three respective VFDs.

11. Sheet E-22, Replace the sheet with the attached.

a. Added a new Transformer Grounding Detail and Detail Callout.

12. Sheet E-23,

a. On the bottom left of the sheet, call out the "Hydraulic System Center (HSC)" to identify the enclosure.

13. Sheet E-24,

a. For circuit 16 in Panelboard A schedule, change breaker size to 40A/1P, wire size to #8, and conduit size to 1" for the UV SCC Control Panel.

14. Sheet D-01, Add the following to the General Demolition Notes:

a. "3. After demolition and removal of existing rails, wall shall be cleaned of all deleterious materials that may affect bonding of the new wall extension. The top of the existing concrete wall shall be sounded to verify the integrity of the wall. If unsound concrete is found, additional demolition may be required. Notify engineer of any concrete of suspect condition."

15. Sheet S-03, Replace the sheet with the attached.

a. Equipment support pad location adjusted and general sheet note 6 added.

16. Sheet S-04, Replace the sheet with the attached.

a. Hooks added to reinforcing detail 4.

17. Sheet S-05, Replace the sheet with the attached.

a. Detail 1 updated expanding upon doweling information.

18. Sheet S-06, Replace the sheet with the attached.

a. Sheet rearranged and additional beam added.

19. Sheet S-08, Replace the sheet with the attached.

a. Detail 3 updated to reduce the depth of the beam pocket.

This Addendum, including these six (6) pages, is sixteen (16) pages with attachments in its entirety.
Attachments: Plan Sheets D-03, M-04, E-13, E-14, E-22, S-03, S-04, S-05, S-06, S-08.

Arcadis U.S., Inc.
Texas Firm No. F-533

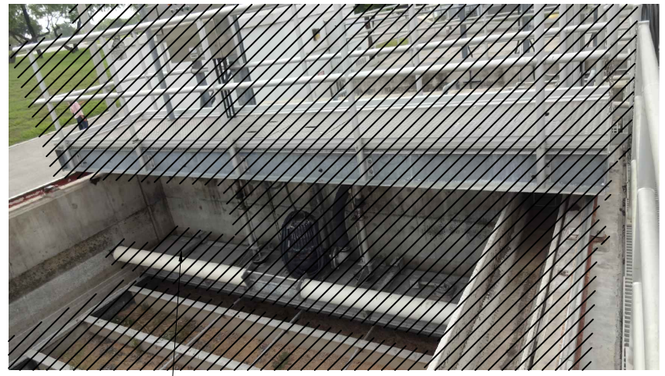
11-07-2018

Gupta & Associates, Inc. (Electrical)
Texas Firm No. F-2593

END OF ADDENDUM 1

1 DETAIL D-03

2 DETAIL D-03

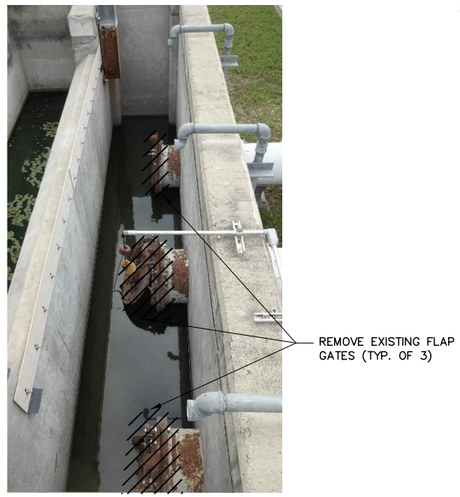


3 DETAIL D-03

4 DETAIL D-03

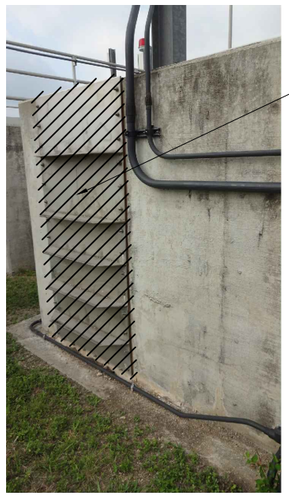
5 DETAIL D-03

6 DETAIL D-03



7 DETAIL D-03

8 DETAIL D-03



9 DETAIL D-03

LEGEND:

TO BE DEMOLISHED OR REMOVED

GENERAL DEMOLITION NOTES:

1. ALL ALUMINIUM GRATING AND RAILINGS ARE TO BE REUSED AFTER STRUCTURAL MODIFICATIONS.
2. PROVIDE ALL GRATING AND RAILINGS THAT ARE REUSED WITH NEW ANCHOR BOLTS AND MOUNTING HARDWARE. SUPPORT BRACKETS MAY BE REUSED.

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11.01.2018

SAN ANTONIO WATER SYSTEM

San Antonio Water System

MEDIO CREEK WRC - FILTER AND UV SYSTEM IMPROVEMENTS

NO.	DATE	REVISION	BY
1	10/30/18	ADDENDUM 1	GK

DATE: OCT 2018
PROJECT NO.: 02196061.0000
DESIGNED BY: G. KEHOE
DRAWN BY: K.NATKAR
CHECKED BY:

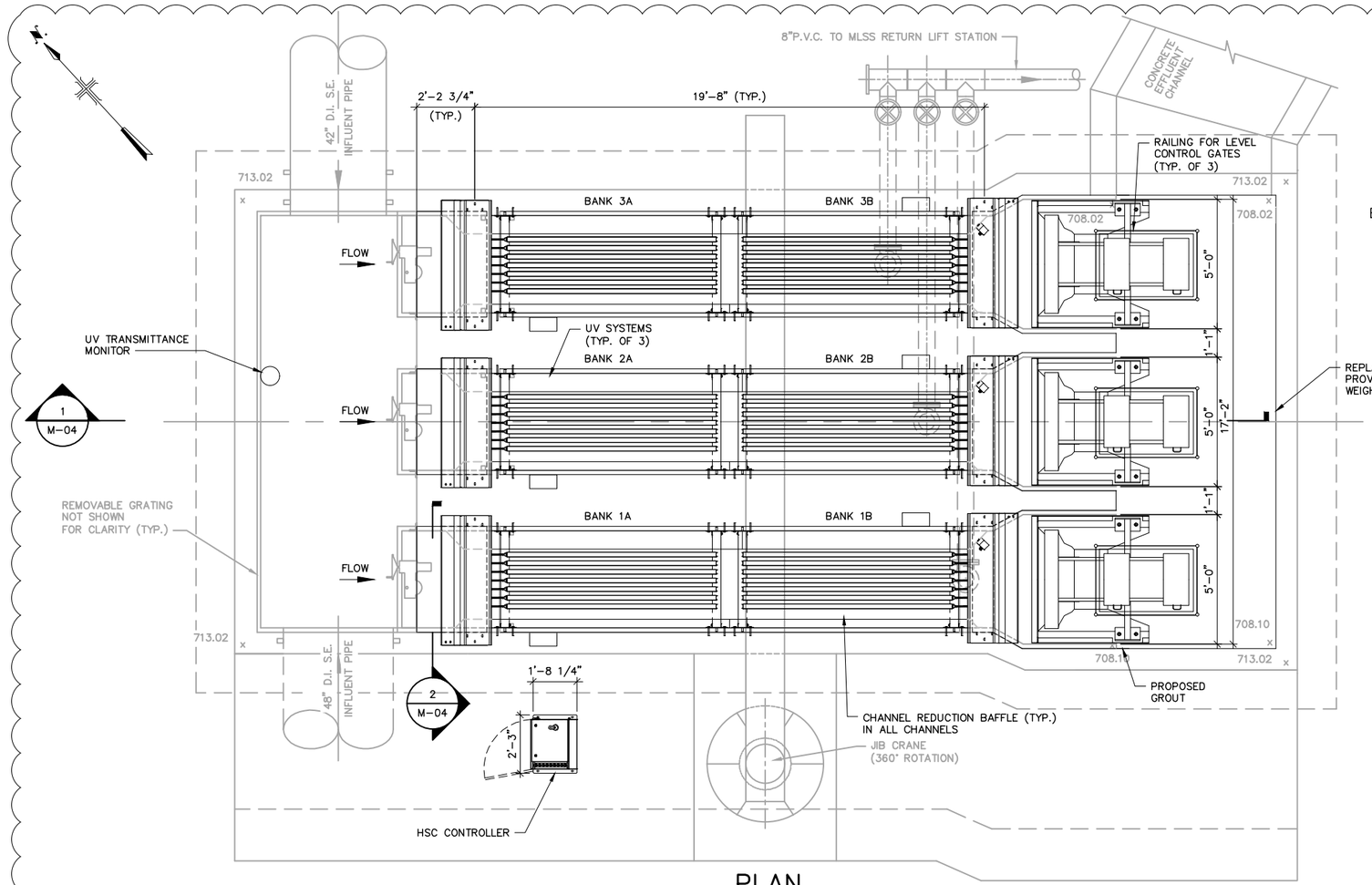
SHEET TITLE

DEMOLITION

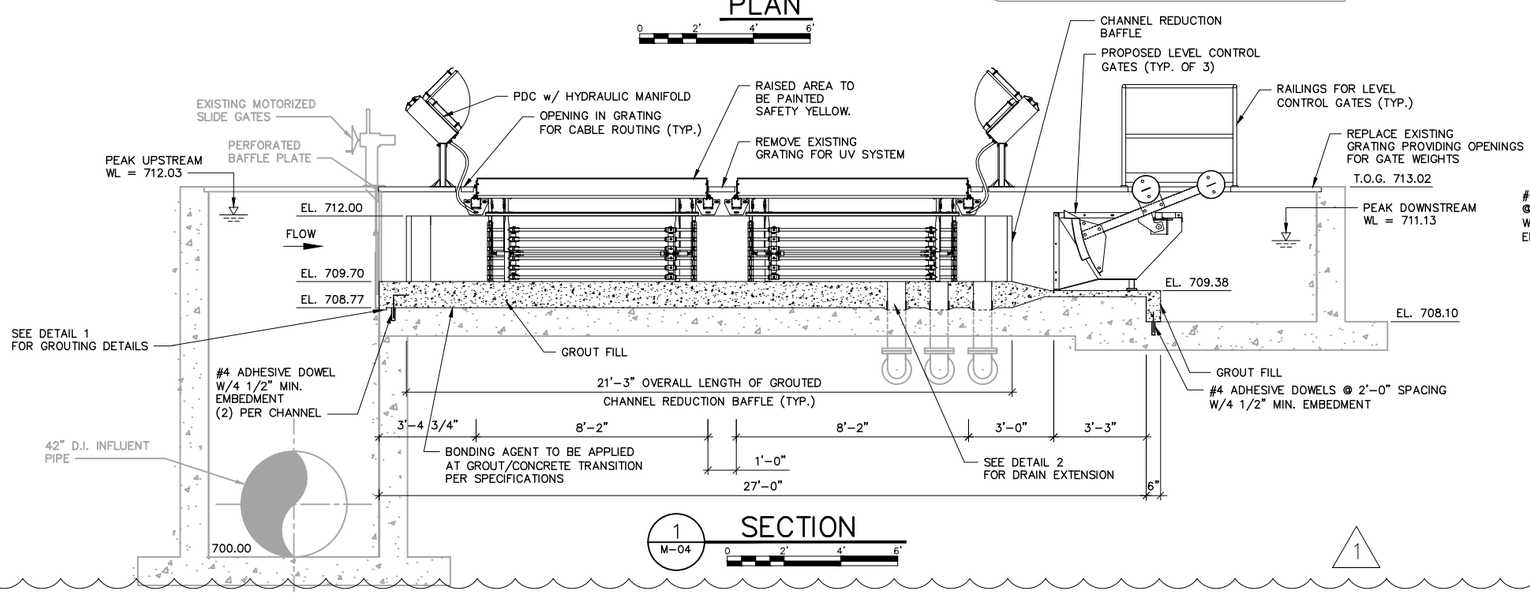
DETAILS FILTERS

SCALE: N.T.S

SHEET D-03
6 OF 67



PLAN

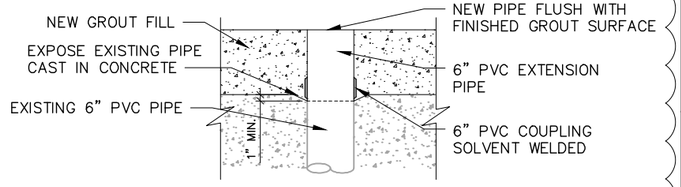


1 M-04 SECTION

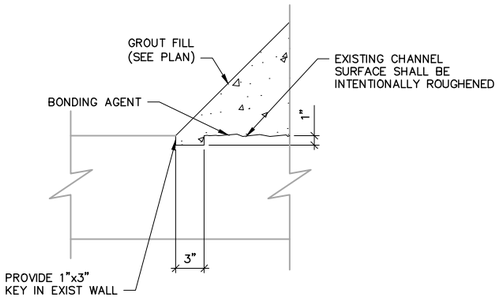
0 2' 4' 6'

NOTES :

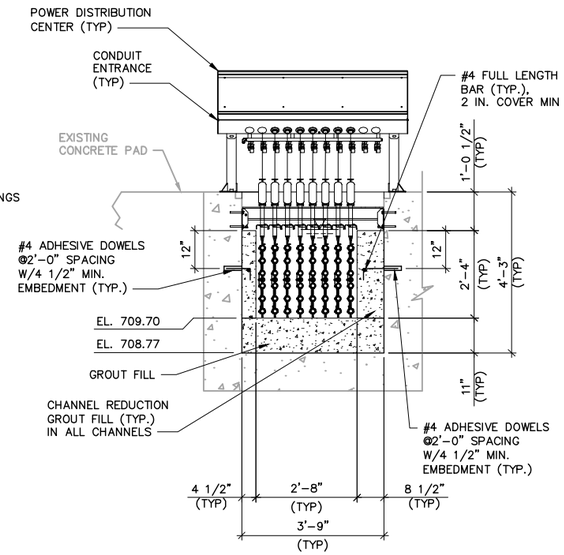
1. HYDRAULIC ELEVATIONS BASED ON 19 MGD FROM NEW PLANT AND 21 MGD FROM OLD PLANT WITH TWO UV CHANNELS IN OPERATION.



DRAIN EXTENSION DETAIL 2



PARTIAL PLAN AT GROUT FILLET DETAIL 1



2 M-04 SECTION

0 1' 2' 4'

ARCADIS
FIRM REGISTRATION NUMBER: F-533

STATE OF TEXAS
GARRETT KEHOE
125662
LICENSED PROFESSIONAL ENGINEER
11.06.2018

SAN ANTONIO WATER SYSTEM

San Antonio Water System

MEDIO CREEK WRC - FILTER AND UV SYSTEM IMPROVEMENTS

NO.	DATE	REVISION	BY
1	10/30/18	ADDENDUM 1	GK

COPYRIGHT:	ARCADIS U.S., INC.
DATE:	OCT 2018
PROJECT NO.:	02196061.0000
DESIGNED BY:	G. KEHOE
DRAWN BY:	K.NATKAR
CHECKED BY:	

SHEET TITLE

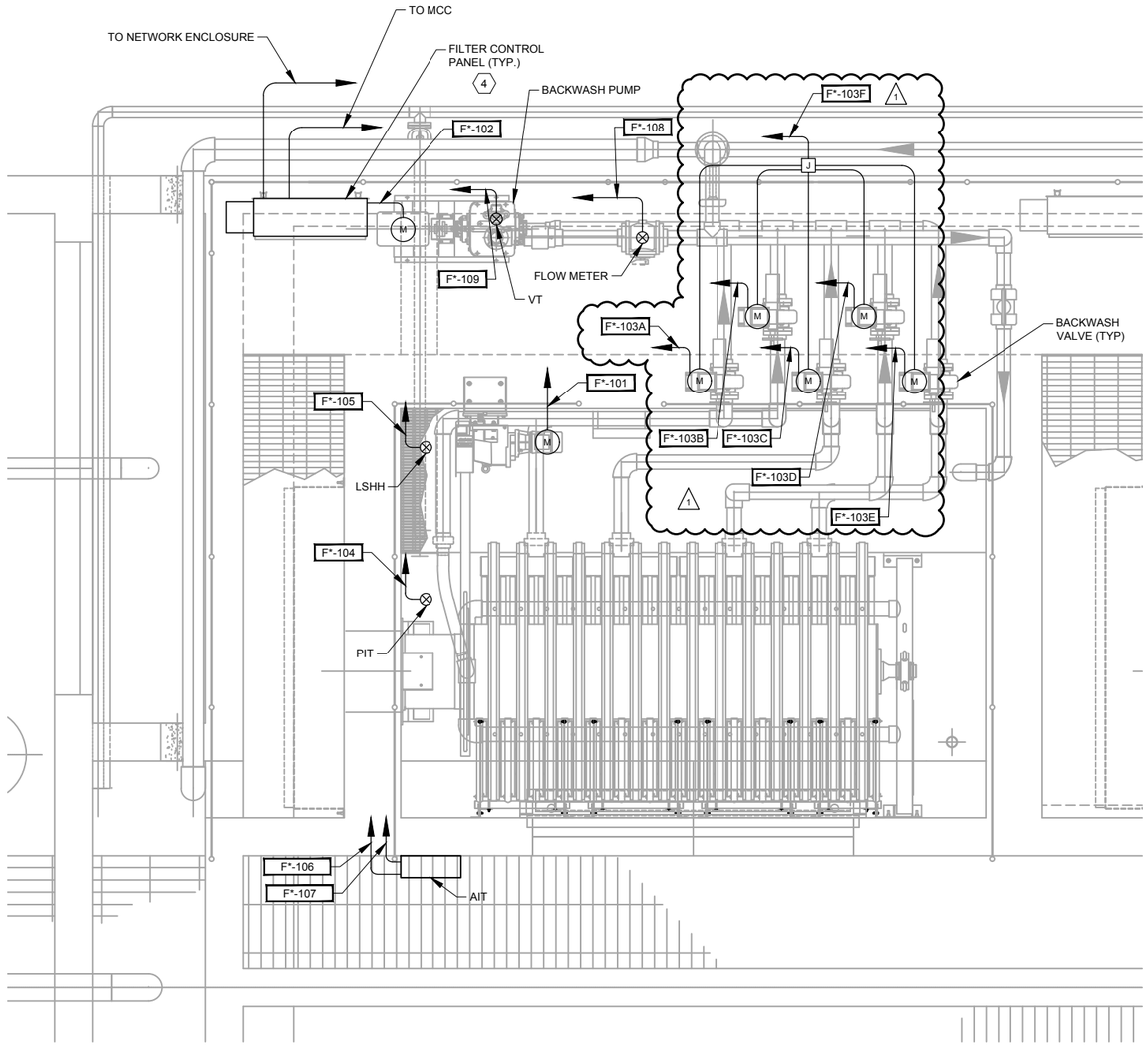
MECHANICAL

PLAN – UV SYSTEMS

SCALE: AS SHOWN

SHEET M-04

14 OF 67



1 - TYPICAL ENLARGED FILTERS (1) (2) (3)

0 1' 2' 4'

NOTES:

1. THIS PLAN IS TYPICAL OF 3 FILTERS. FOR CONDUIT TAGS AND REFERENCES, REPLACE THE * WITH THE FILTER NUMBER (5, 6, OR 7). REFER TO SHEET E-14 FOR RISER DIAGRAM.
2. EXACT LOCATION OF ALL COMPONENTS AND DEVICES SHALL BE COORDINATED WITH THE MANUFACTURER.
3. CONDUIT FROM THE CONTROL PANEL TO THE FIELD DEVICES SHALL BE INSTALLED IN THE SLAB AND WALLS. COORDINATE WITH STRUCTURAL BEFORE SLAB IS POURED.
4. FOR FILTER NO.5, THE CONTROL PANEL IS ORIENTED DIFFERENTLY. REFER TO SHEET E-10 FOR PLAN VIEW.

ARCADIS
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10/17/2018

SAN ANTONIO WATER SYSTEM

MEDIO CREEK WRC - FILTER AND UV SYSTEM IMPROVEMENTS

NO.	DATE	REVISION	BY
1	11/5/18	ADDENDUM NO.1	DG

DATE: OCTOBER 2018
PROJECT NO.: 02196061.0000
DESIGNED BY: D.GHOBRIAL
DRAWN BY: M.CHAMBERLIN
CHECKED BY: V.K. GUPTA

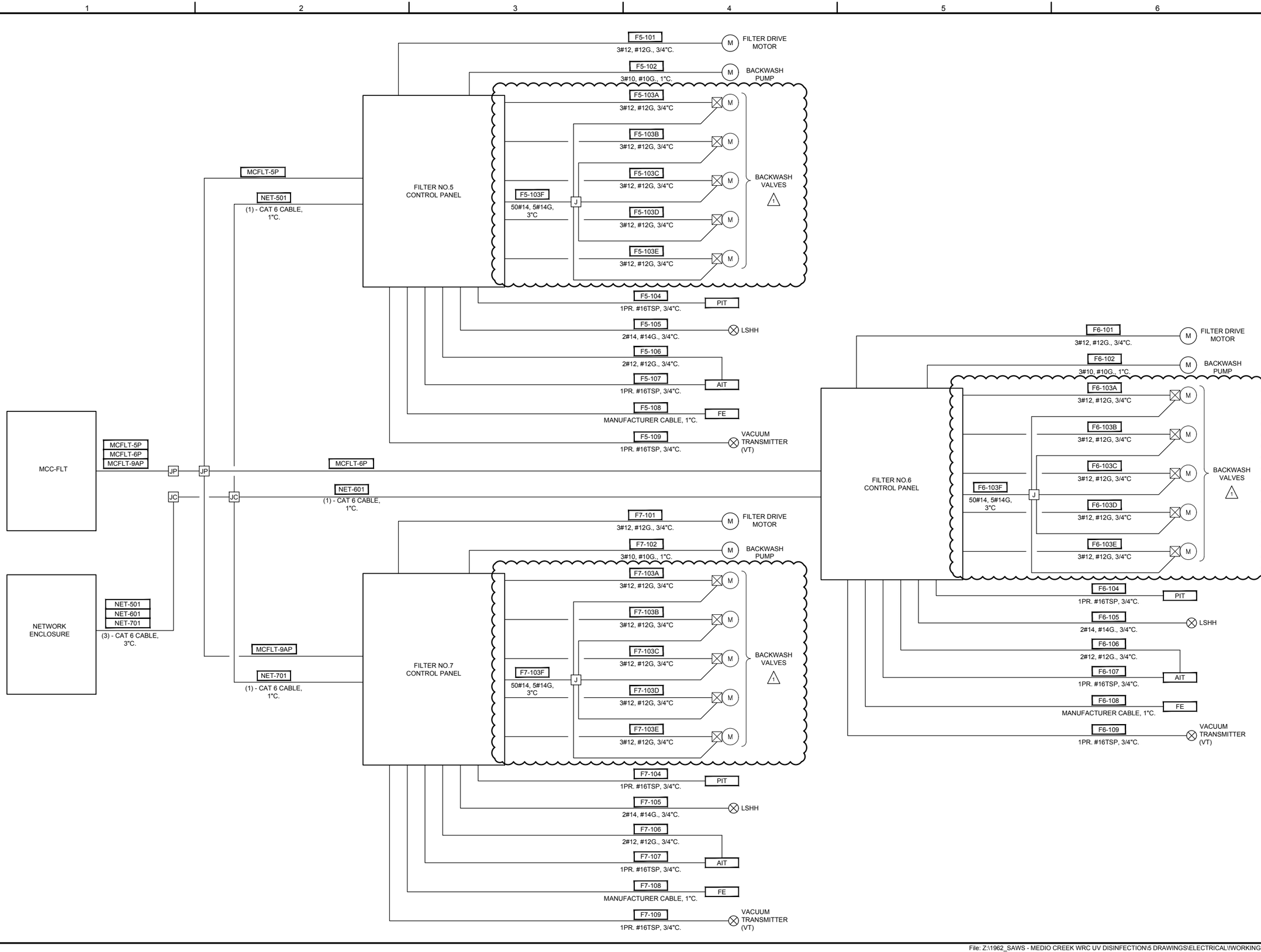
SHEET TITLE

ELECTRICAL

ENLARGED TYPICAL FILTER PLAN

SCALE: NONE

SHEET E-13
53 OF 67



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DATE: OCTOBER 2018
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DESIGNED BY: D.GHOBRIAL
DRAWN BY: M.CHAMBERLIN
CHECKED BY: V.K. GUPTA

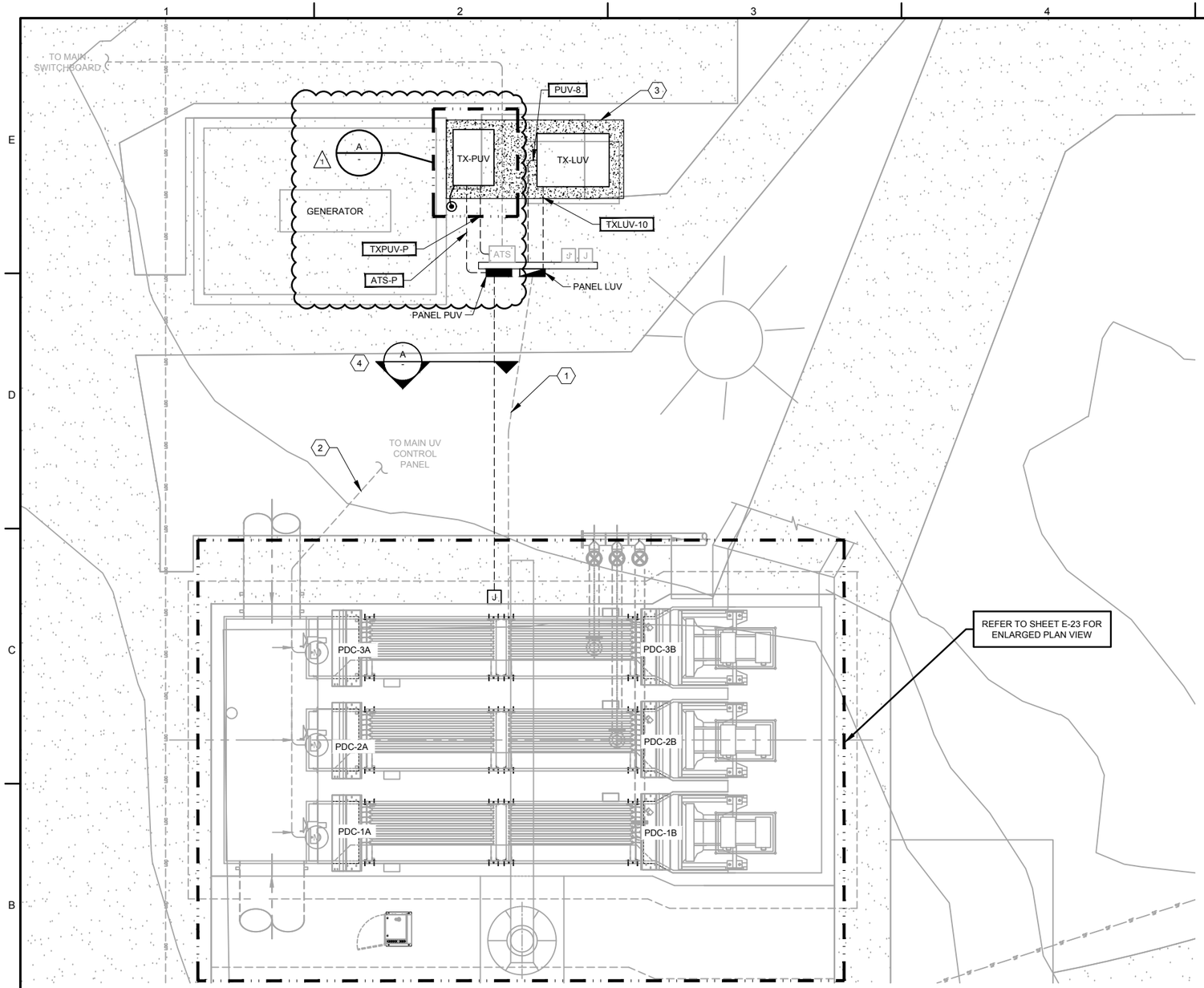
SHEET TITLE

ELECTRICAL

FILTER SYSTEM RISER DIAGRAM

SCALE: NONE

SHEET E-14
54 OF 67

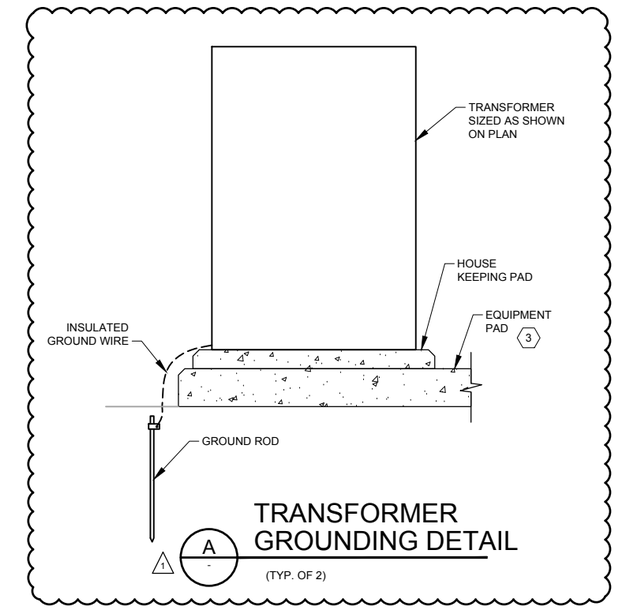


PLAN

0 2' 4' 8'

NOTES:

1. EXISTING DUCTBANK BETWEEN THE ELECTRICAL RACK AND UV SYSTEM SHALL REMAIN. RECONNECT EXISTING POWER WIRES FROM THE LOADS TO THE NEW PANELBOARD.
2. EXISTING CONTROL WIRE BETWEEN THE UV INLET SLIDE GATES AND THE MAIN UV SYSTEM CONTROL PANEL SHALL REMAIN IN PLACE TO BE RECONNECTED.
3. EXTEND CONCRETE PAD AROUND THE NEW TRANSFORMERS. FORM AND POUR TO MATCH EXISTING PAD.
4. FIELD ROUTE NEW DUCTBANK TO AVOID CONFLICT WITH EXISTING UNDERGROUND UTILITES.

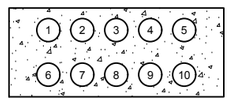


TRANSFORMER GROUNDING DETAIL

A

1

(TYP. OF 2)



DUCTBANK

SECTION A

TABLE FOR SECTION A

CONDUIT NO.	CONDUIT TAG	CONDUIT SIZE	DESCRIPTION
1	PUV-2	2"C	UV PDC -1A POWER
2	PUV-3	2"C	UV PDC - 1B POWER
3	PUV-4	2"C	UV PDC - 2A POWER
4	PUV-5	2"C	UV PDC - 2B POWER
5	PUV-6	2"C	UV PDC - 3A POWER
6	PUV-7	2"C	UV PDC - 3B POWER
7	PUV-9	2"C	HYDRAULIC CENTER POWER
8	SPARE	2"C	PULLSTRING
9	SCC-101	2"C	UV COMMUNICATION
10	SPARE	2"C	PULLSTRING

ARCADIS
FIRM REGISTRATION NUMBER: F-533

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SAN ANTONIO WATER SYSTEM

MEDIO CREEK WRC - FILTER AND UV SYSTEM IMPROVEMENTS

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DATE: OCTOBER 2018
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DESIGNED BY: D.GHOBRIAL
DRAWN BY: M.CHAMBERLIN
CHECKED BY: V.K. GUPTA

SHEET TITLE

ELECTRICAL

UV AREA PLAN MODIFICATION

SCALE: NONE

SHEET E-22

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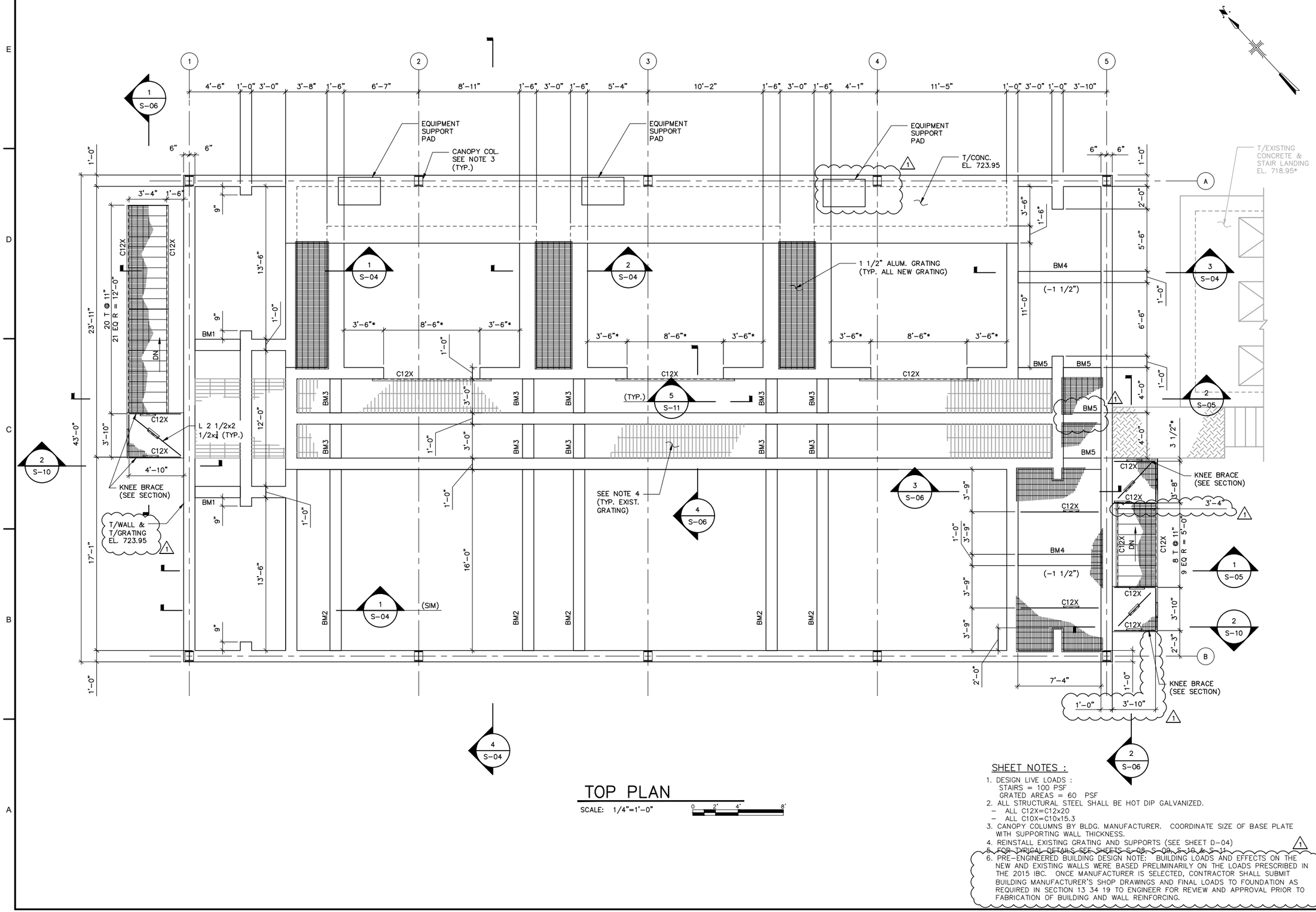


TOP PLAN

SCALE: 1/4"=1'-0"

0 2' 4' 8'

SHEET NOTES :

1. DESIGN LIVE LOADS :
   STAIRS = 100 PSF
   GRATED AREAS = 60 PSF
2. ALL STRUCTURAL STEEL SHALL BE HOT DIP GALVANIZED.
   - ALL C12X=C12x20
   - ALL C10X=C10x15.3
3. CANOPY COLUMNS BY BLDG. MANUFACTURER. COORDINATE SIZE OF BASE PLATE WITH SUPPORTING WALL THICKNESS.
4. REINSTALL EXISTING GRATING AND SUPPORTS (SEE SHEET D-04)
5. ~~FOR TYPICAL DETAILS SEE SHEETS S-08, S-09, S-10 & S-11~~
6. PRE-ENGINEERED BUILDING DESIGN NOTE: BUILDING LOADS AND EFFECTS ON THE NEW AND EXISTING WALLS WERE BASED PRELIMINARILY ON THE LOADS PRESCRIBED IN THE 2015 IBC. ONCE MANUFACTURER IS SELECTED, CONTRACTOR SHALL SUBMIT BUILDING MANUFACTURER'S SHOP DRAWINGS AND FINAL LOADS TO FOUNDATION AS REQUIRED IN SECTION 13 34 19 TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OF BUILDING AND WALL REINFORCING.

ARCADIS
FIRM REGISTRATION NUMBER: F-533

STATE OF TEXAS
RAELDA VEJAS CAULEY
115074
LICENSED
PROFESSIONAL ENGINEER
11/7/18

SAN ANTONIO WATER SYSTEM

San Antonio Water System

MEDIO CREEK WRC - FILTER AND UV SYSTEM IMPROVEMENTS

NO.	DATE	REVISION	BY
1	11/7/18	ADDENDUM NO. 1	IVC

DATE: OCTOBER 2018
PROJECT NO.: 02196061.0000
DESIGNED BY: I. CAULEY
DRAWN BY: C. VINAY
CHECKED BY: M. HEMMELGARN

SHEET TITLE

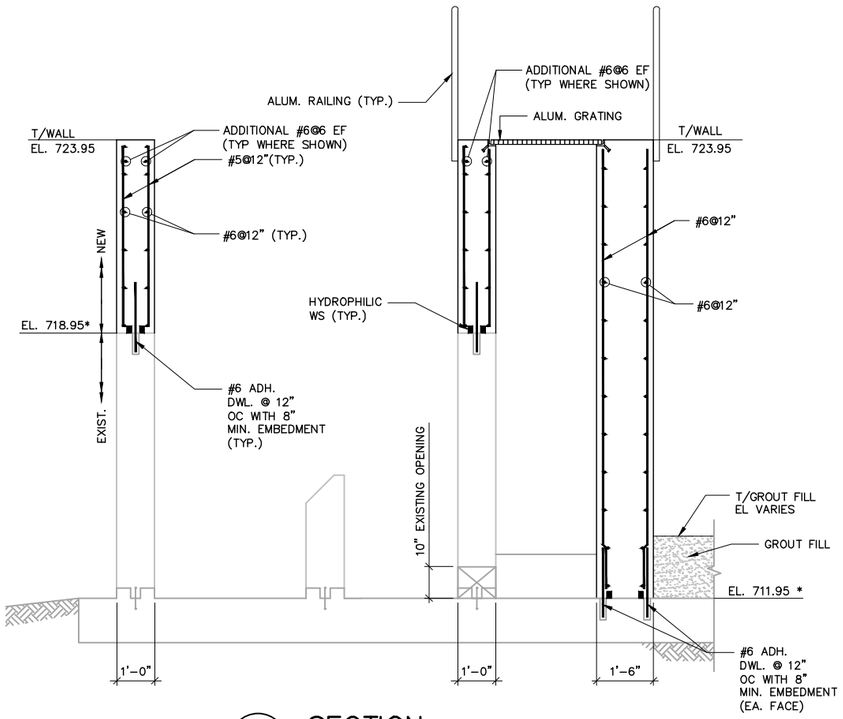
STRUCTURAL

TOP PLAN FILTERS

SCALE: 1/4" = 1'-0"

SHEET S-03

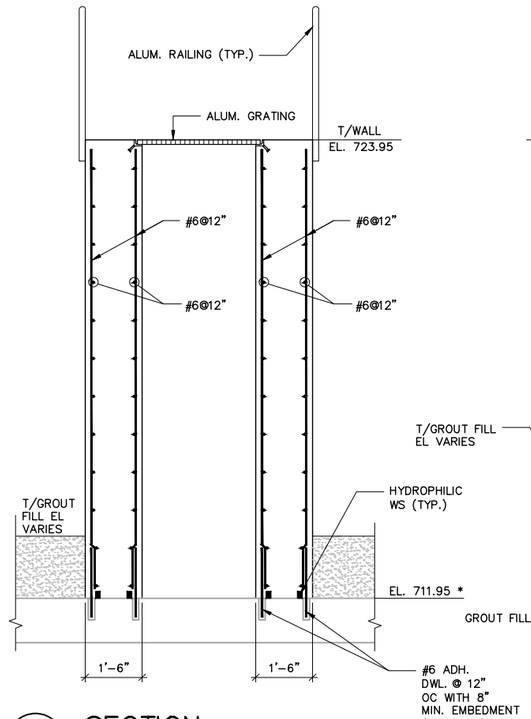
19 OF 67



1 S-04 SECTION

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

NOTE: STAIR NOT SHOWN FOR CLARITY



2 S-04 SECTION

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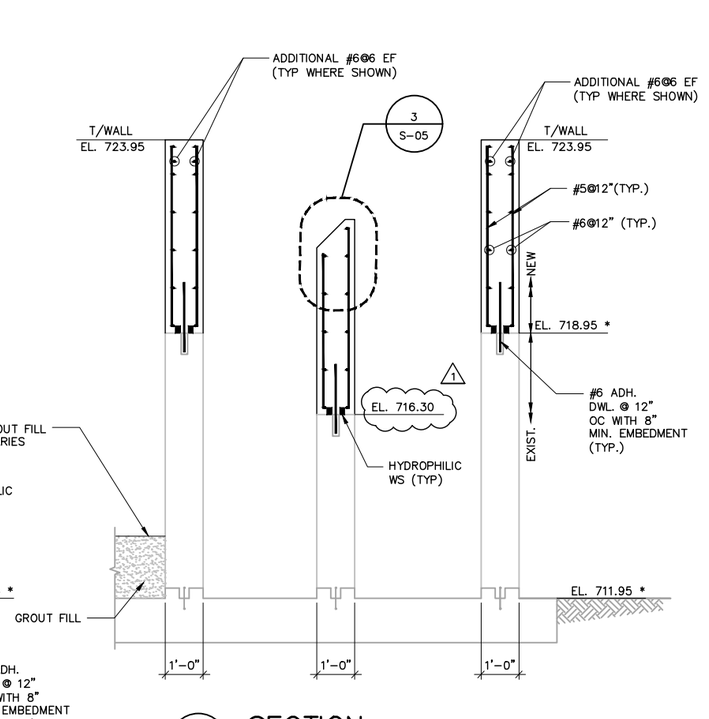

3 S-04 SECTION

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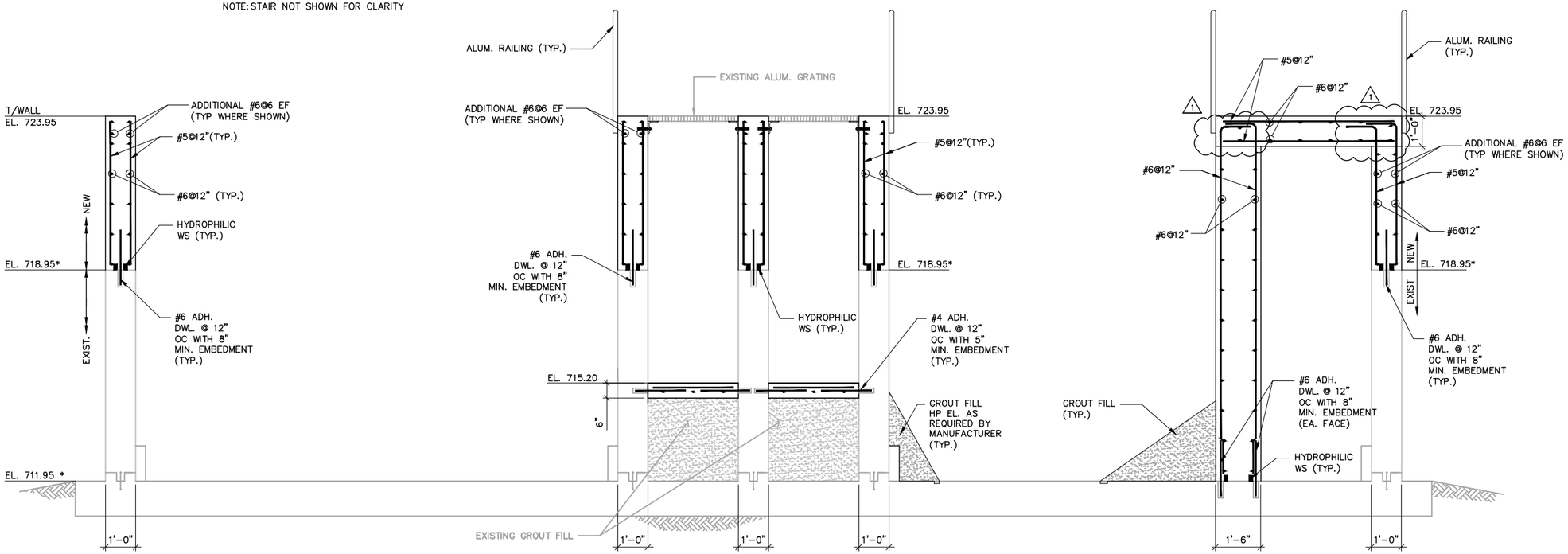

4 S-04 SECTION

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

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CHECKED BY:	M. HEMMELGARN

SHEET TITLE

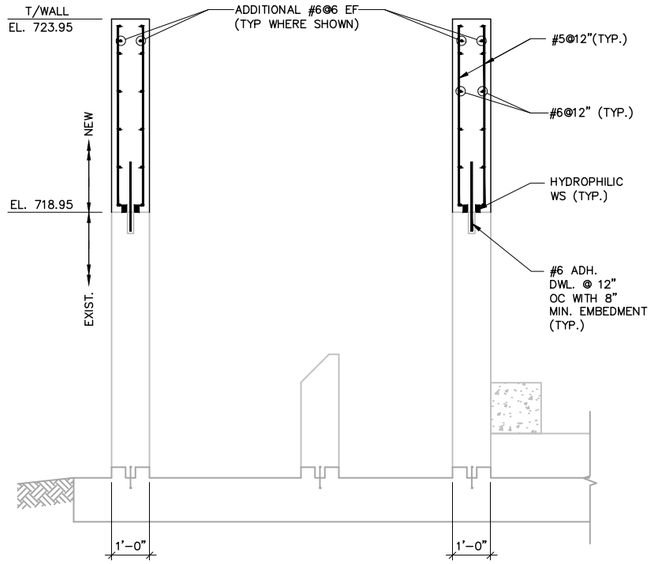
STRUCTURAL

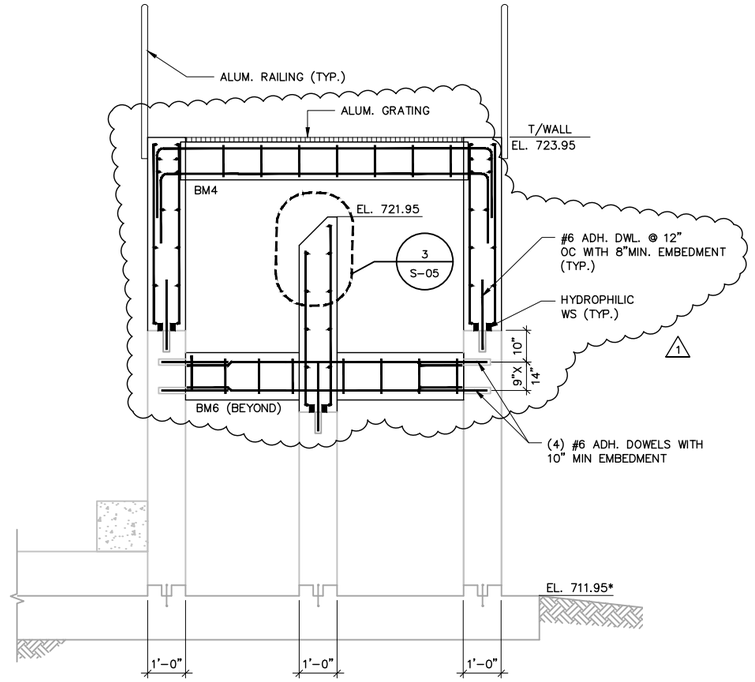
FILTERS
SECTIONS AND DETAILS-I

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

SHEET S-04

20 OF 67

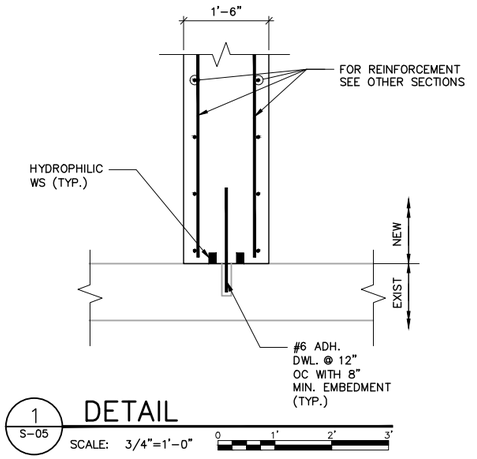




1 S-05 SECTION

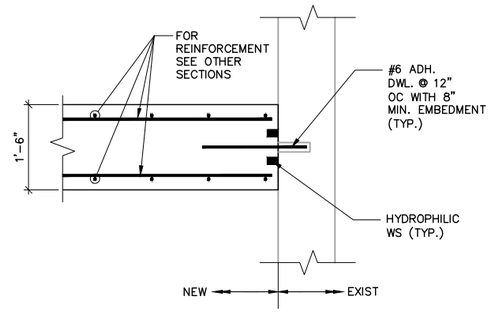
SCALE: 1/2"=1'–0"

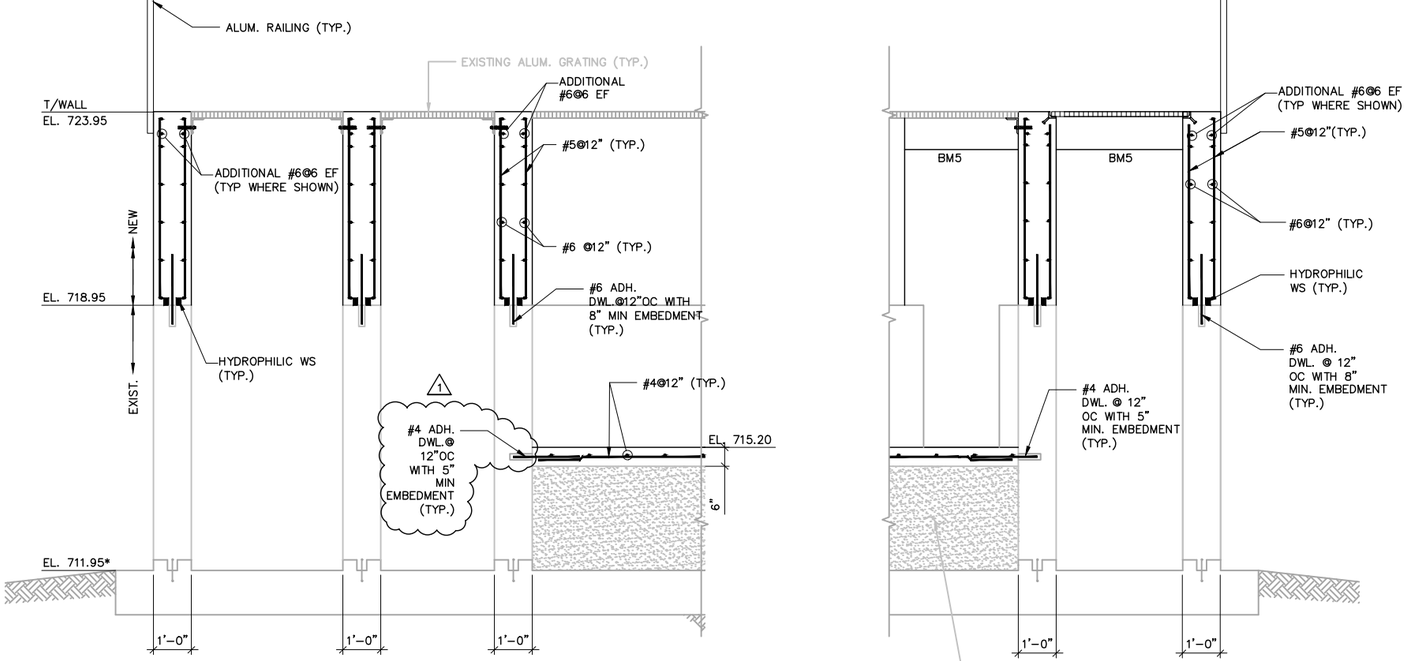
NOTE: STAIR NOT SHOWN FOR CLARITY



1 S-05 DETAIL

SCALE: 3/4"=1'–0"

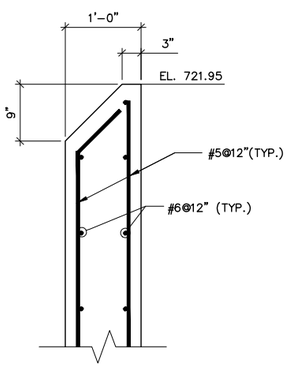




2 S-05 SECTION

SCALE: 1/2"=1'–0"

NOTE: STAIR NOT SHOWN FOR CLARITY



2 S-05 DETAIL

SCALE: 3/4"=1'–0"

3 S-05 DETAIL

SCALE: 3/4"=1'–0"

ARCADIS

FIRM REGISTRATION NUMBER: F-533

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MEDIO CREEK WRC -
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SHEET TITLE

STRUCTURAL

**FILTERS
SECTIONS AND DETAILS
II**

SCALE: AS SHOWN

SHEET S–05

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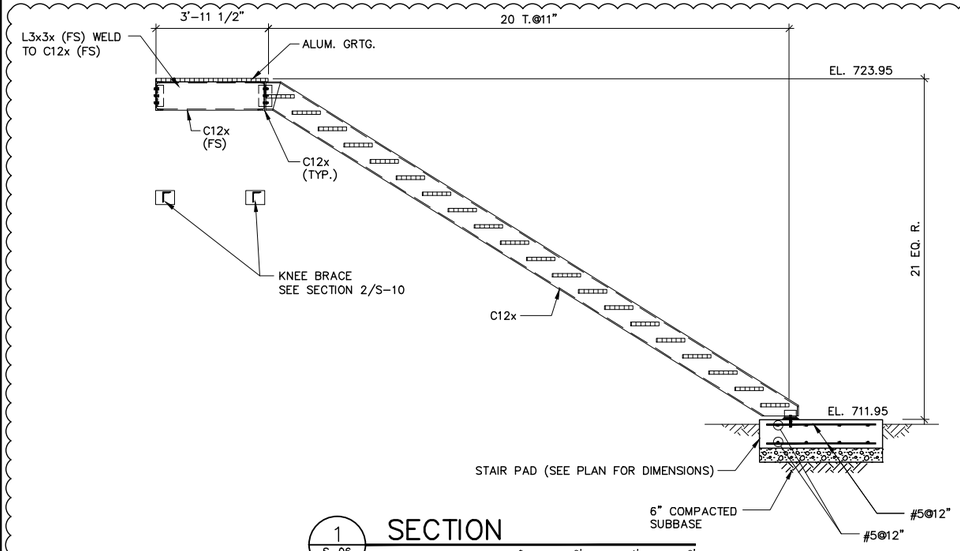
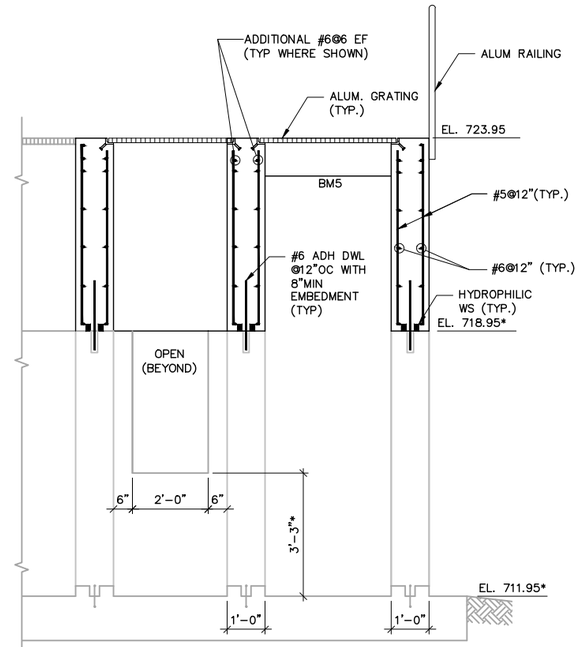
File: G:\PROJECTS\02196061.0000 - SAWS MEDIO CREEK\STRUCTURAL\07 - CAD\BID SET\SHEETS\STRUCTURAL Date: 11/6/2018 2:49 PM Last Saved By: CAULEY



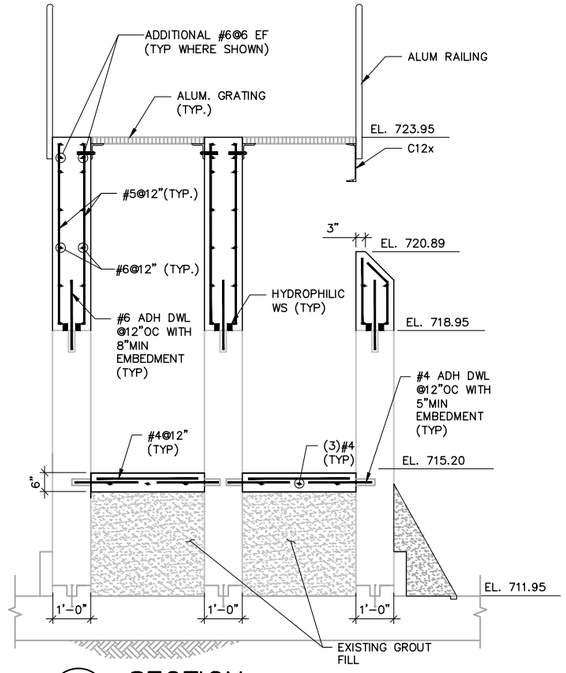
1 S-06 SECTION

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



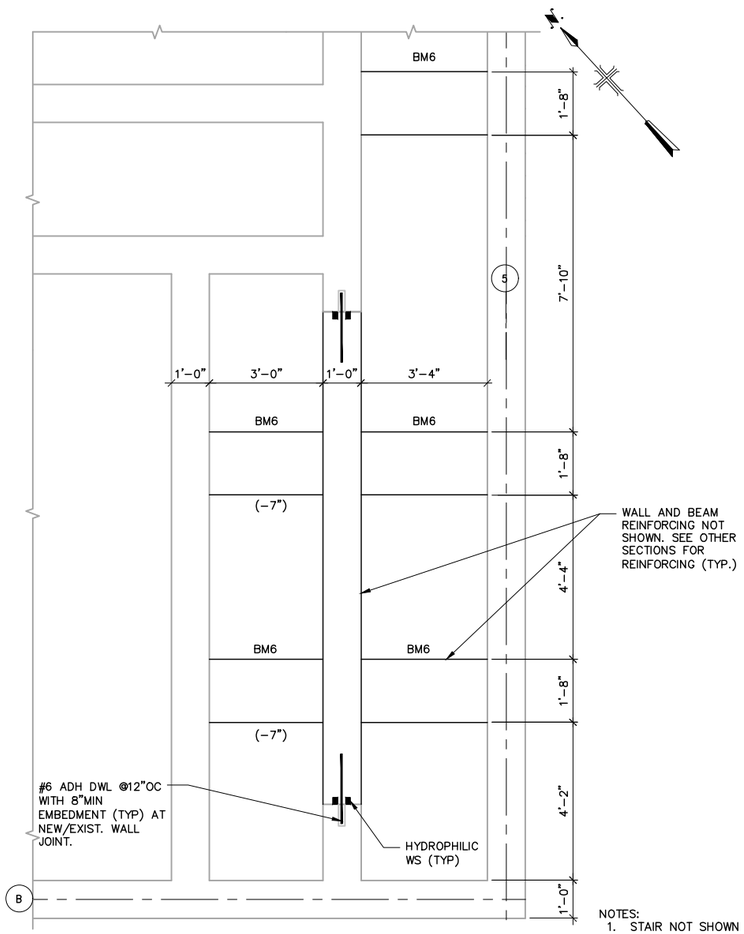
3 S-06 SECTION

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



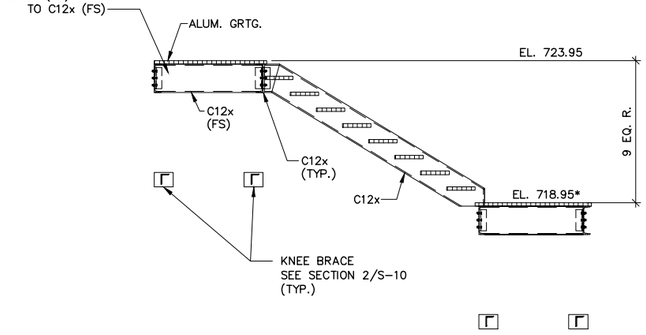
4 S-06 SECTION

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



PARTIAL PLAN AT ELEVATION 718.95

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



2 S-06 SECTION

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

NOTES:
1. STAIR NOT SHOWN FOR CLARITY.
2. (9) BM6 TOTAL. (PLAN MIRRORED ABOUT BASIN CENTER LINE)

BEAM SCHEDULE

MARK	SPAN DIRECTION	SIZE		REINFORCING					STIRRUPS		REMARKS
				TOP			BOTTOM				
		W	D	W OR S ADD'L	CONT	E OR N ADD'L	FULL LENGTH	ADD'L	SIZE	SPACING	
BM1	E-W	12"	12"	2#6	2#6	2#6	2#6	2#6	#4	12"	
BM2	N-S	12"	12"	2#6	2#6	2#6	2#6	2#6	#4	12"	
BM3	N-S	12"	12"	2#6	2#6	2#6	2#6	2#6	#4	12"	
BM4	E-W	12"	12"	2#6	2#6	2#6	2#6	2#6	#4	12"	
BM5	E-W	12"	12"	2#6	2#6	2#6	2#6	2#6	#4	12"	
BM6	E-W	20"	15"	2#6 ADH. DWLS.	2#6	2#6 ADH. DWLS.	2#6	2#6 ADH. DWLS.	#4	12"	SEE NOTE 3

BEAM SCHEDULE NOTES:
1. SEE PLANS FOR BEAM LOCATIONS.
2. SEE "TYPICAL REINFORCED CONCRETE BEAM DETAILS" ON SHEET S-08 FOR ADDITIONAL REQUIREMENTS.
3. SEE SECTION 1/S-05 ON SHEET S-05 FOR ADDITIONAL REQUIREMENTS

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San Antonio Water System

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CHECKED BY: M. HEMMELGARN

SHEET TITLE

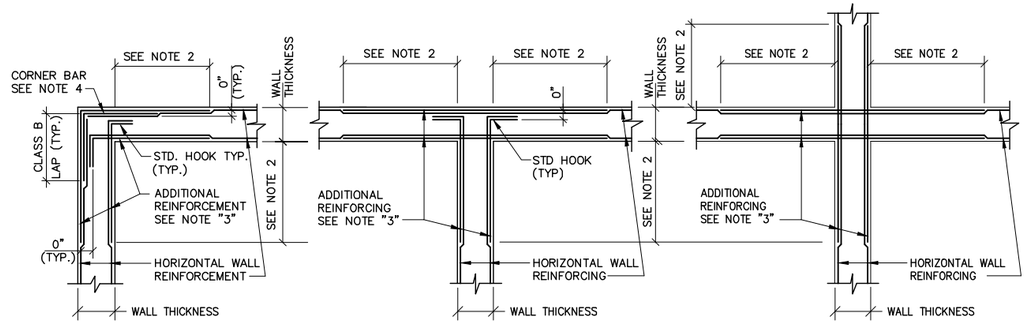
STRUCTURAL

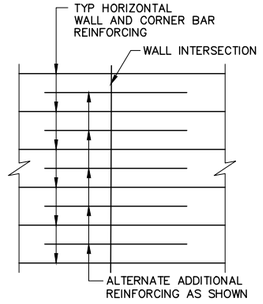
FILTERS SECTIONS AND DETAILS III

SCALE: AS SHOWN

SHEET S-06

22 OF 67



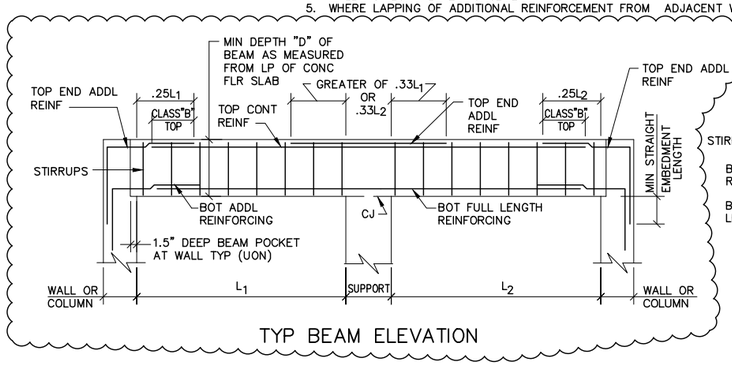


TYP DEVELOPED ELEVATION AT WALL INTERSECTION

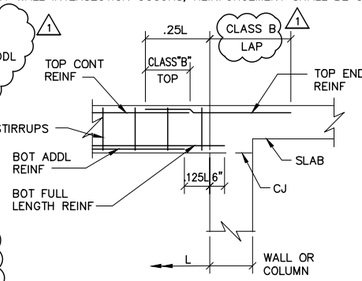
TYPICAL REINFORCEMENT DETAIL AT WALL INTERSECTIONS

1 / S-08 DETAIL

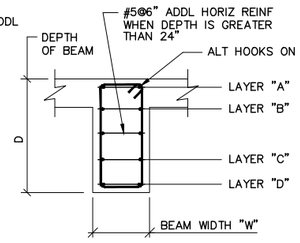
NOTES:
1. PROVIDE ADDITIONAL REINFORCING AT ALL WALL INTERSECTIONS AS SHOWN ABOVE U.O.N. ON DWGS.
2. DIMENSION TO BE 0.25 TIMES THE CLEAR SPAN DISTANCE BETWEEN WALL INTERSECTIONS MEASURED HORIZONTALLY, BUT NOT LESS THAN 2'-0", NOR GREATER THAN 6'-0".
3. ADDITIONAL REINFORCEMENT TO MATCH SIZE AND SPACING OF WALL HORIZONTAL REINFORCEMENT (UON). ALTERNATE ADDITIONAL REINFORCEMENT WITH HORIZONTAL WALL REINFORCEMENT.
4. PROVIDE CORNER BAR REINFORCING AT ALL WALL CORNERS AS SHOWN. CORNER BAR REINFORCEMENT TO MATCH SIZE AND SPACING OF WALL HORIZONTAL REINFORCEMENT.
5. WHERE LAPPING OF ADDITIONAL REINFORCEMENT FROM ADJACENT WALL INTERSECTION OCCURS, REINFORCEMENT SHALL BE COMBINED.



TYP BEAM ELEVATION



TYP BEAM TO WALL/COLUMN WITH ADJACENT SLAB

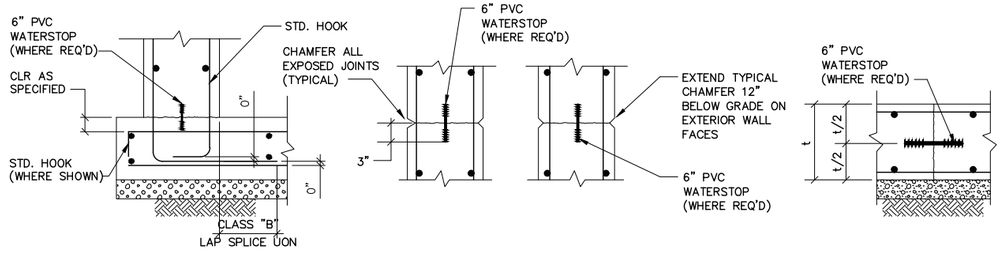


TYP BEAM SECTION

TYPICAL REINFORCED CONCRETE BEAM DETAILS

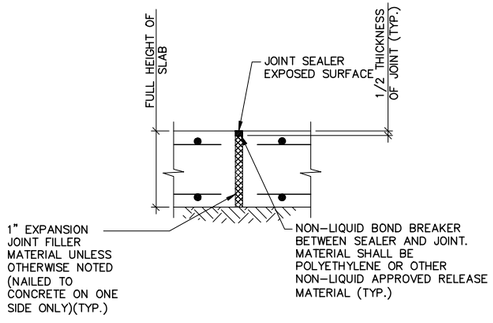
3 / S-08

NOTES:
1. UNLESS OTHERWISE NOTED, REINFORCING STEEL IS IN LAYERS (A) AND (D).
2. SEE PLAN AND SECTIONS FOR SPECIFIC BEAM REQUIREMENTS.
3. BOTTOM BARS ARE TO BE CONTINUOUS FROM BEAM POCKET TO BEAM POCKET.
4. FOR GENERAL CONCRETE NOTES, SEE SHEET S-01.
5. PLACE FIRST STIRRUP AT 2" FROM SUPPORT FACE, EACH END.
6. WHERE BOTTOM BARS ARE NOTED TO BE CONTINUOUS, PROVIDE CLASS "B" LAP SPLICE CENTERED OVER SUPPORT.
7. WHERE TOP BARS ARE NOTED TO BE CONTINUOUS, PROVIDE CLASS "B" LAP SPLICE CENTERED ON BEAM MIDSPAN.



TYPICAL CONSTRUCTION JOINT DETAIL

5 / S-08

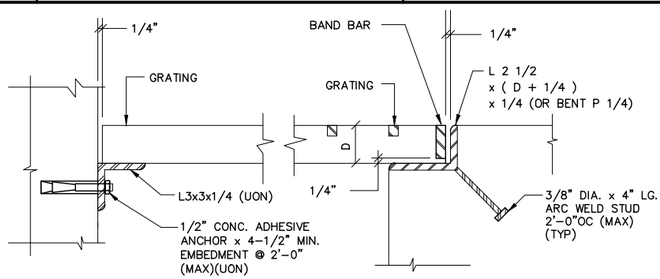


HORIZONTAL & VERTICAL

NOTE:
1. DISCONTINUE ALL REINFORCING BARS AT EXPANSION JOINTS.

TYPICAL EXPANSION JOINT DETAIL

6 / S-08

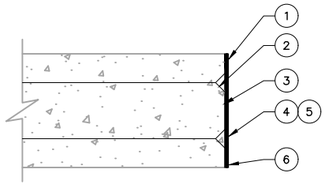


ALL NOTES AND DIMENSIONS ARE TYPICAL FOR SIMILAR CONDITIONS

TYPICAL GRATING SUPPORT

2 / S-08 DETAIL

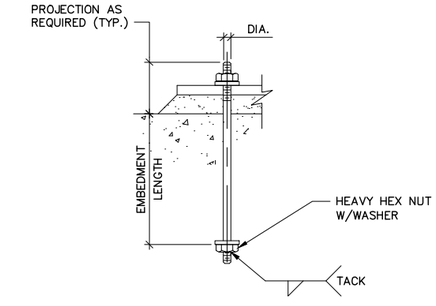
NOTES:
1. PROVIDE TYPICAL SUPPORT AS SHOWN FOR ALL GRATING SUPPORT.
2. PROVIDE SUPPORT ANGLE AND ANCHOR STUD OF THE SAME MATERIAL AS THE GRATING.
3. PROVIDE ADHESIVE ANCHORS AT ALL EXTERIOR OR SUBMERGED LOCATIONS FOR ALL OTHER LOCATIONS REFER TO SPECIFICATIONS. MINIMUM EDGE DISTANCE SHALL BE PER ANCHOR MANUFACTURER REQUIREMENTS.



SAW CUT CONCRETE REPAIR DETAIL

4 / S-08

1. SAW CUT SURFACE OF EXISTING CONCRETE. WHERE NECESSARY, USE SPECIFIED REPAIR MORTAR TO PATCH DAMAGED OR OVER CUT AREAS PRIOR TO PROCEEDING WITH SPECIFIED REPAIR SYSTEM.
2. BURN BACK ALL EXPOSED REINFORCING TO A DEPTH OF 2" MINIMUM. PATCH VOID WITH SPECIFIED REPAIR MORTAR.
3. ROUGHEN EXISTING SURFACE AS REQUIRED.
4. LIBERALLY APPLY A MINIMUM OF TWO COATINGS OF THE CORROSION INHIBITOR TO ALL SURFACES.
5. AFTER ADEQUATE DRYING TIME, LOW-PRESSURE WASH ALL SURFACES TO REMOVE DEPOSITED FILM FROM CORROSION INHIBITOR.
6. APPLY 2 COATS OF PROTECTIVE SLURRY MORTAR.
7. APPLY ALL MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.



TYPICAL ANCHOR BOLT

7 / S-08 DETAIL

NOTES:
1. REFER TO SPECIFICATIONS OR CONTRACT DRAWING DETAILS FOR ANCHOR BOLT EMBEDMENT DEPTH REQUIREMENTS. FOR EQUIPMENT ANCHOR BOLT DIAMETER AND EMBEDMENT SHALL BE AS SHOWN OR AS REQUIRED BY EQUIPMENT MANUFACTURER.
2. REFER TO SPECIFICATIONS, CONTRACT DRAWING DETAILS OR MANUFACTURER'S DETAILS FOR ANCHOR BOLT MATERIAL REQUIREMENTS.

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SHEET TITLE

STRUCTURAL

TYPICAL DETAILS I

SCALE: NO SCALE

SHEET S-08
24 OF 67