

# **TOWN OF MIDDLETOWN RAW WATER STORAGE IMPROVEMENTS ERECTION DRAWINGS FOR RAW WATER STORAGE TANK**

**FREDERICK COUNTY, MARYLAND**

**OWNER:**

**TOWN OF MIDDLETOWN**

31 WEST MAIN STREET  
MIDDLETOWN, MD 21769

**ENGINEER:**

**GANNETT FLEMING, INC.**

7133 RUTHERFORD ROAD, SUITE 300  
BALTIMORE, MD 21244

**GENERAL CONTRACTOR:**

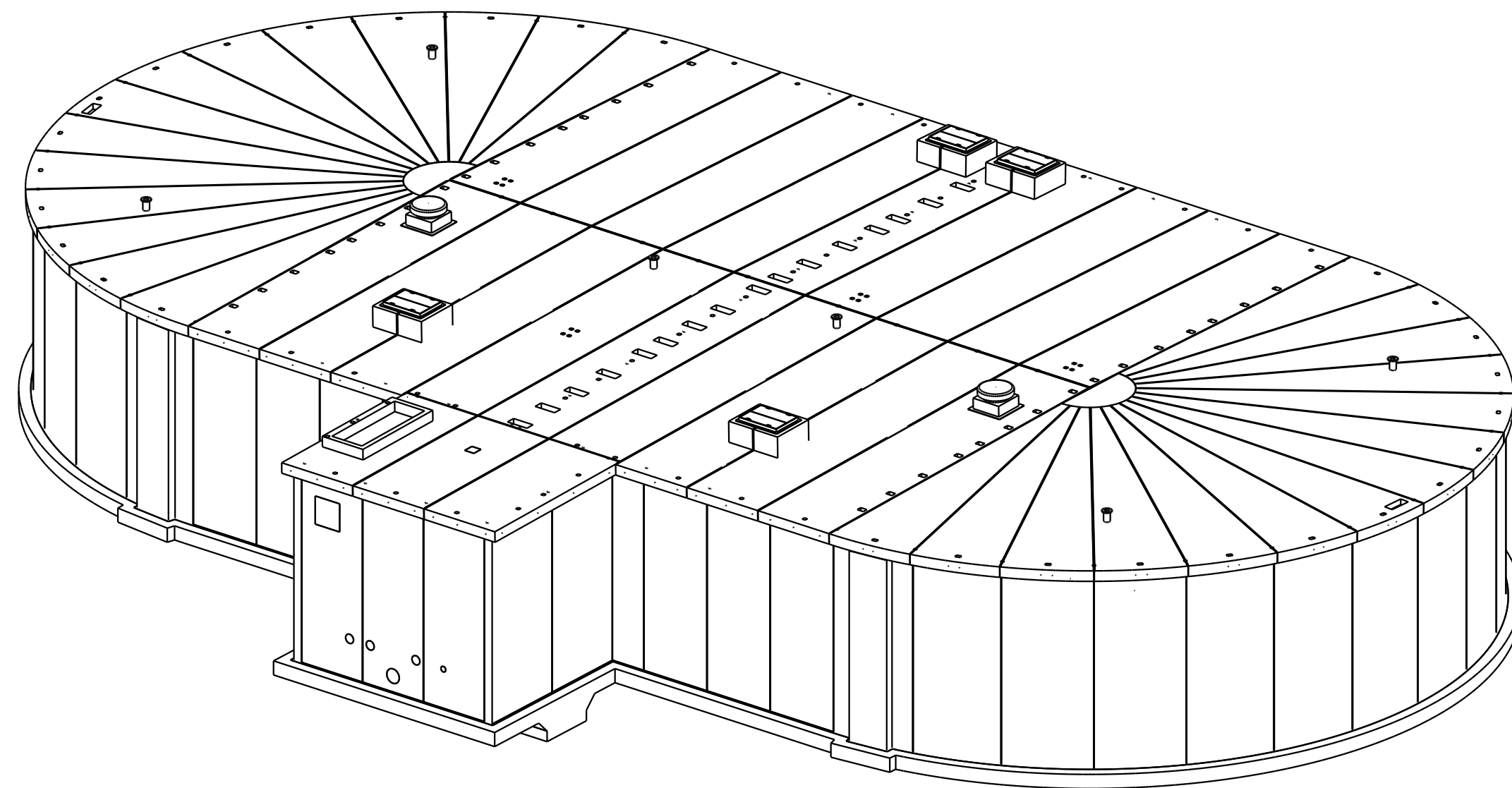
**HRI, INC.**

1750 WEST COLLEGE AVE.  
STATE COLLEGE, PA 16801

**MANUFACTURER:**



160 Rt. 41 - Gap, PA 17527  
Ph. 717-442-8282 Fax 717-442-9330  
www.dutchlandinc.com



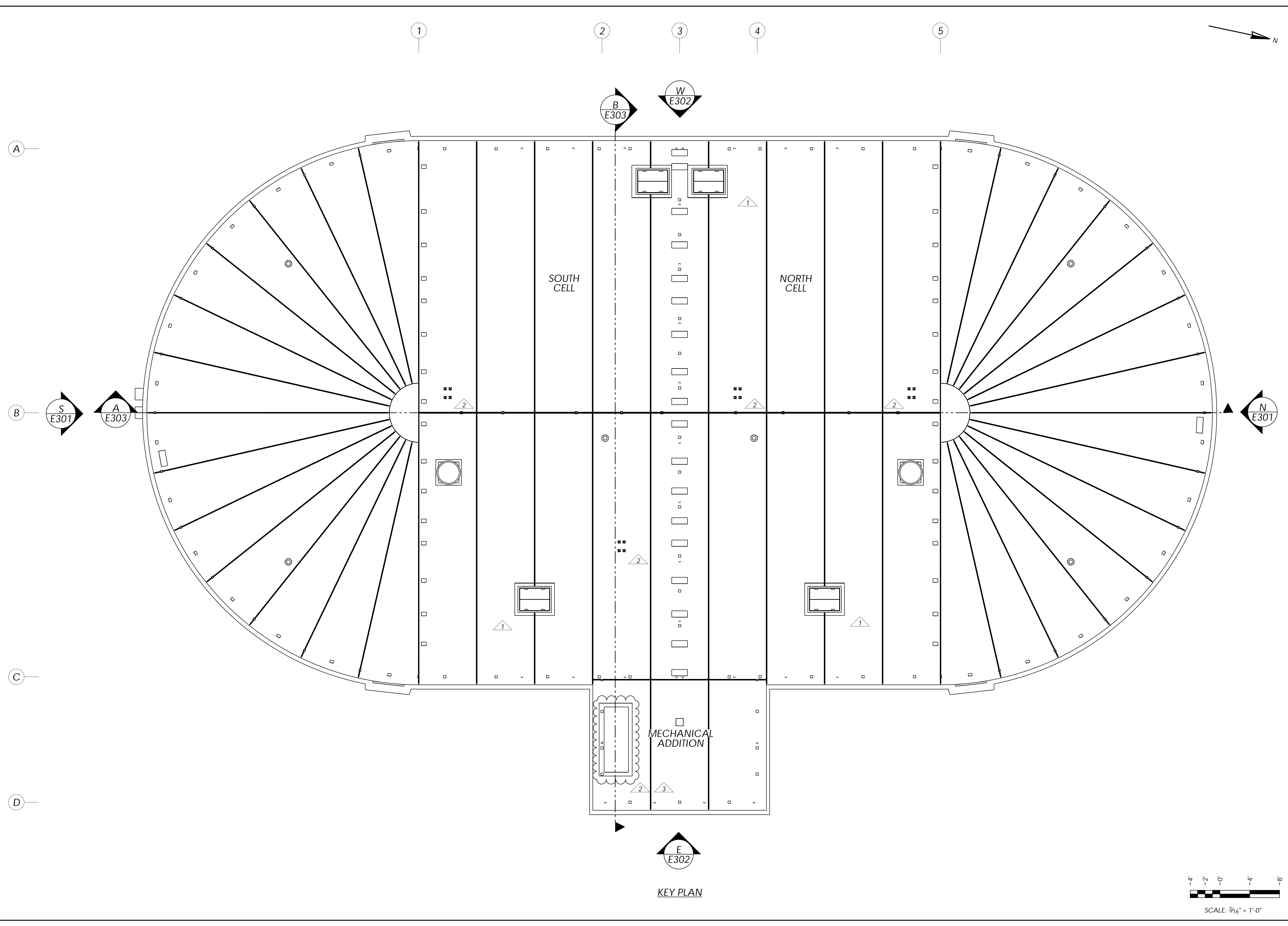
Professional Certification.  
I hereby certify that these documents  
were prepared or approved by me,  
and that I am a duly licensed professional  
engineer under the laws of the State of Maryland,  
License No. 50429, Expiration Date: January 8, 2021

**FOR CONSTRUCTION**

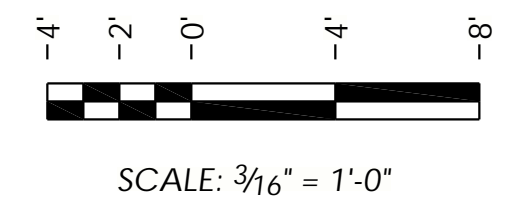
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1	6/11/2020	E402	DETAILS
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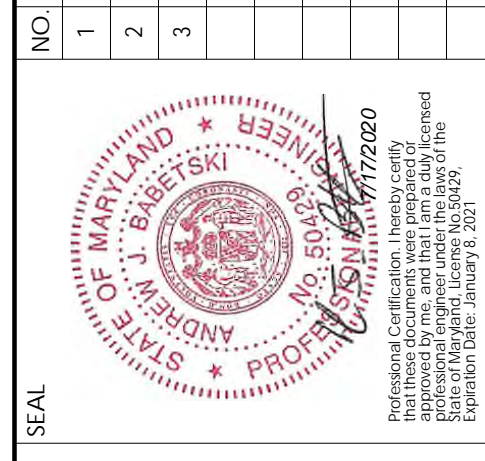




KEY PLAN



NO.	REVISIONS	DATE	BY
1	REVISE & RESUBMIT	05/08/20	SDR
2	ISSUED FOR CONSTRUCTION	06/11/20	SDR
3	ISSUED FOR CONSTRUCTION	07/17/20	SDR



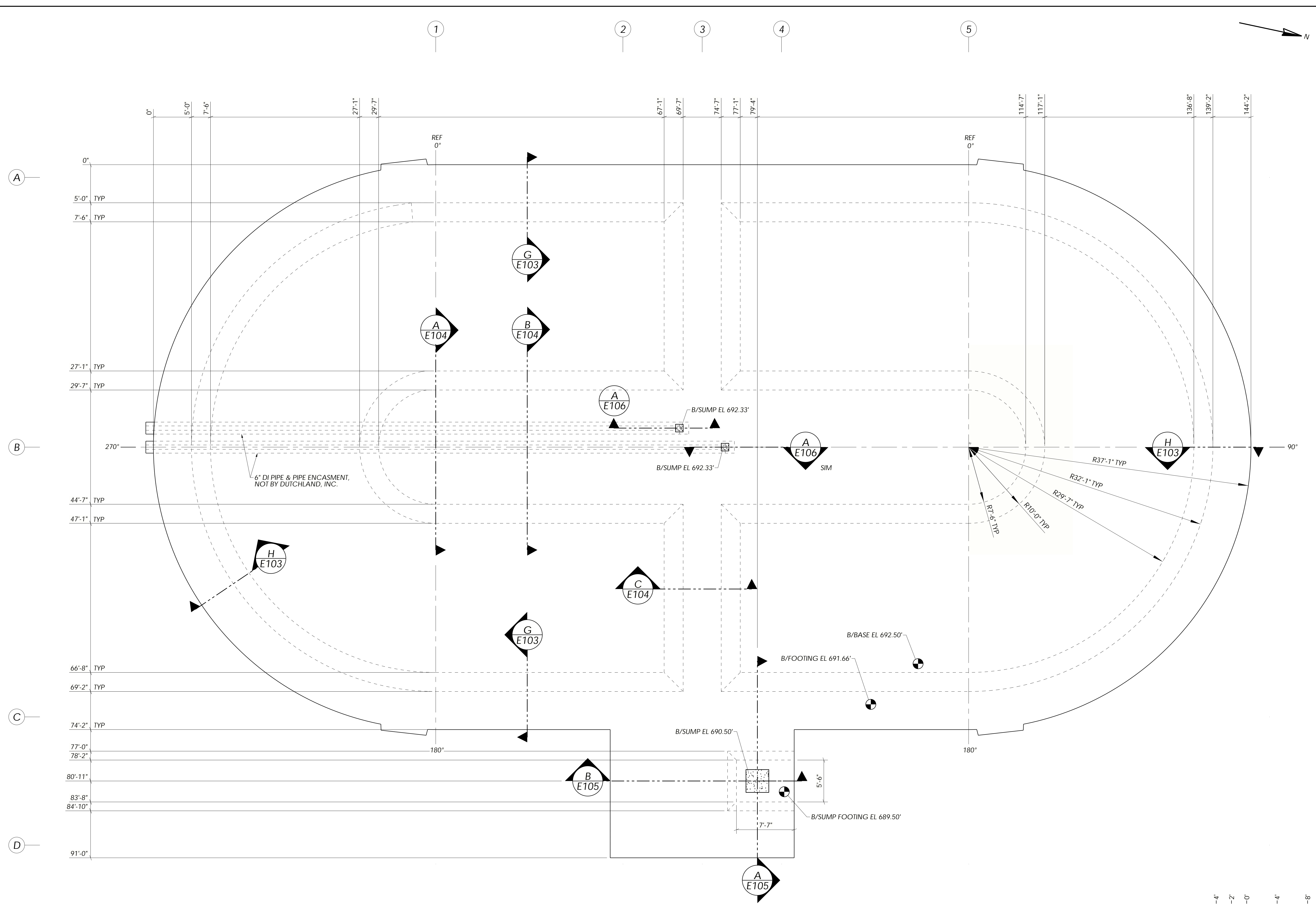
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Project:  
TOWN OF MIDDLETOWN  
RAW WATER STORAGE  
IMPROVEMENTS  
RAW WATER STORAGE TANK  
FREDERICK COUNTY, MD

KEY PLAN

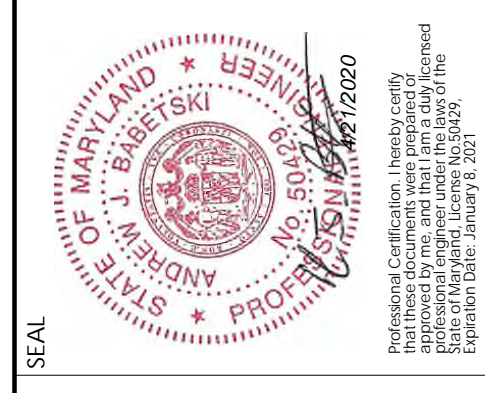
Job Number: 18039-WT
Project Manager: GK
Drawn By: SDR
Checked By: JEP
Issue Date: 04/21/2020
Sheet No. E002



BASE FOUNDATION PLAN



NO.	REVISIONS	DATE	BY



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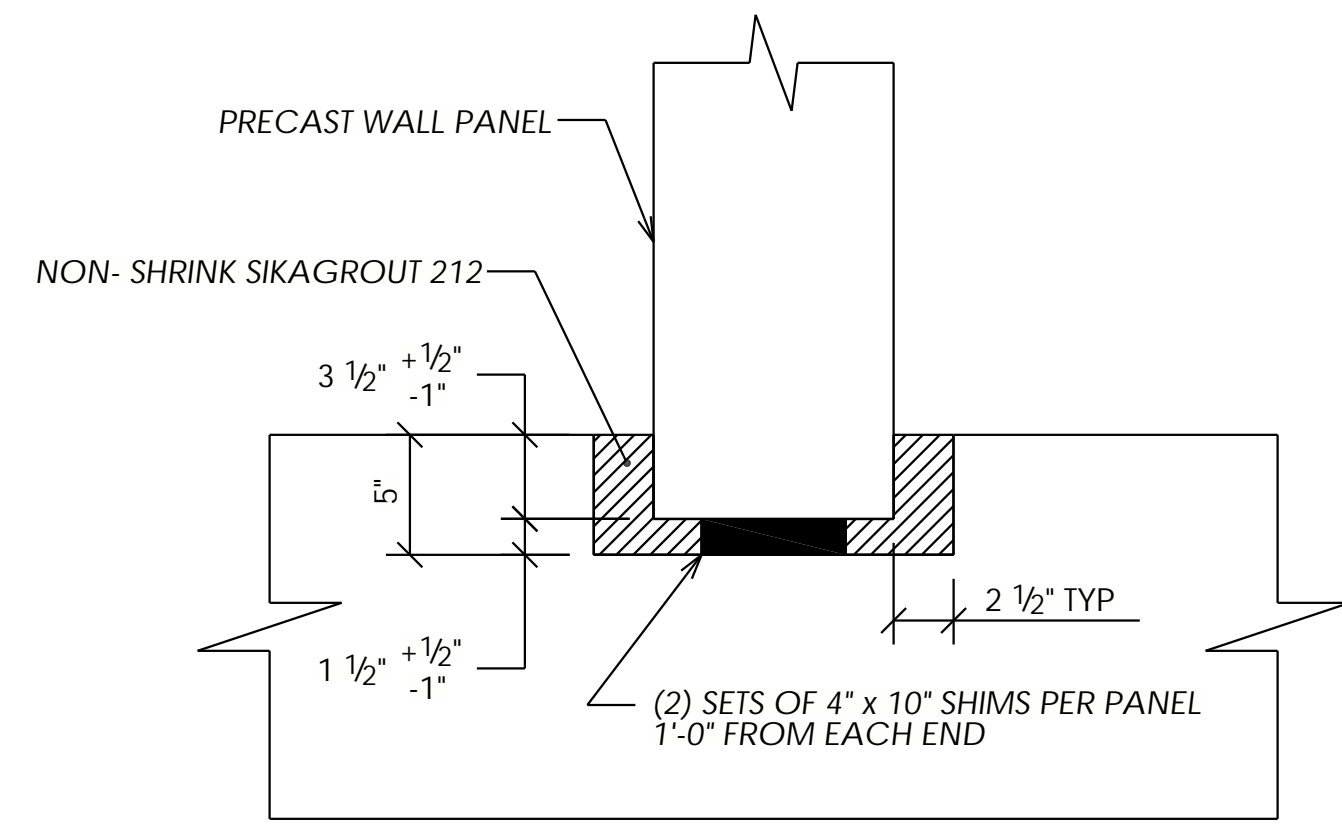


Project:  
TOWN OF MIDDLETOWN  
RAW WATER STORAGE  
IMPROVEMENTS  
RAW WATER STORAGE TANK  
FREDERICK COUNTY, MD

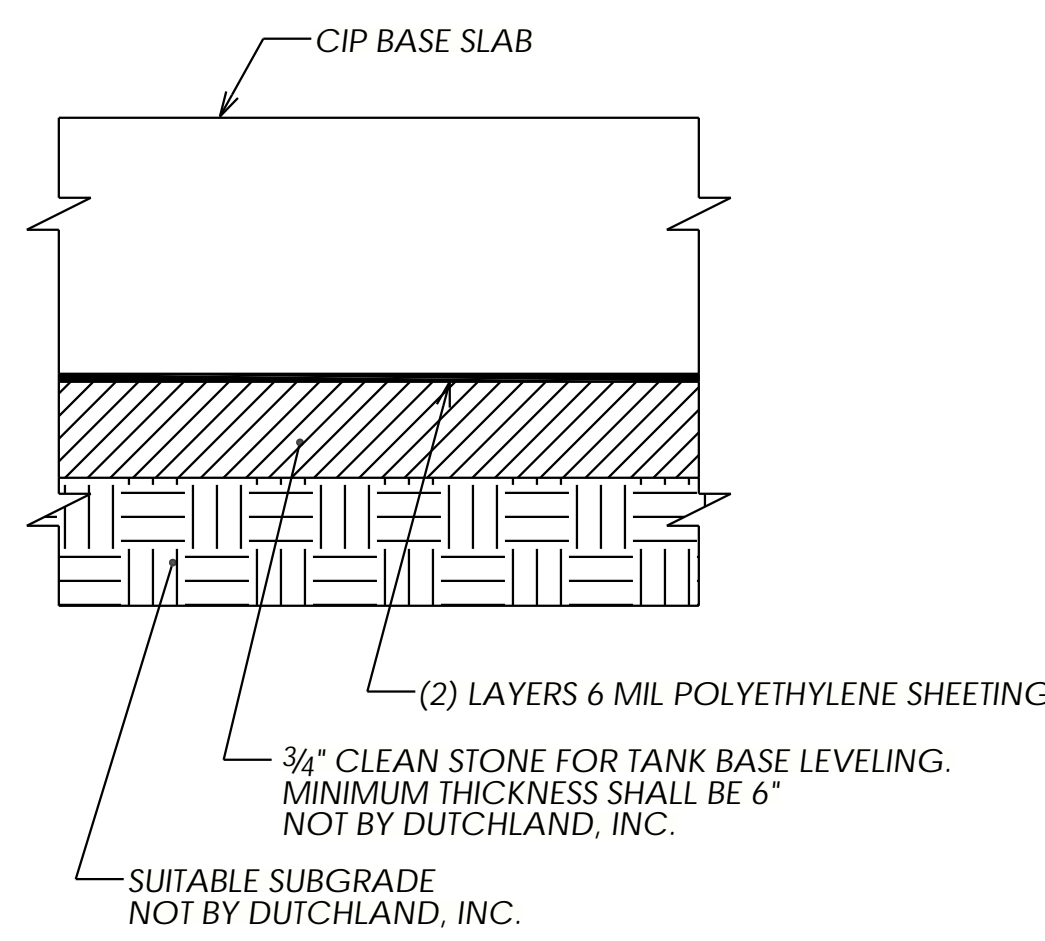
BASE FOUNDATION PLAN

Job Number: 18039-WT  
Project Manager: GK  
Drawn By: SDR  
Checked By: JEP  
Issue Date: 04/21/2020  
Sheet No. E101



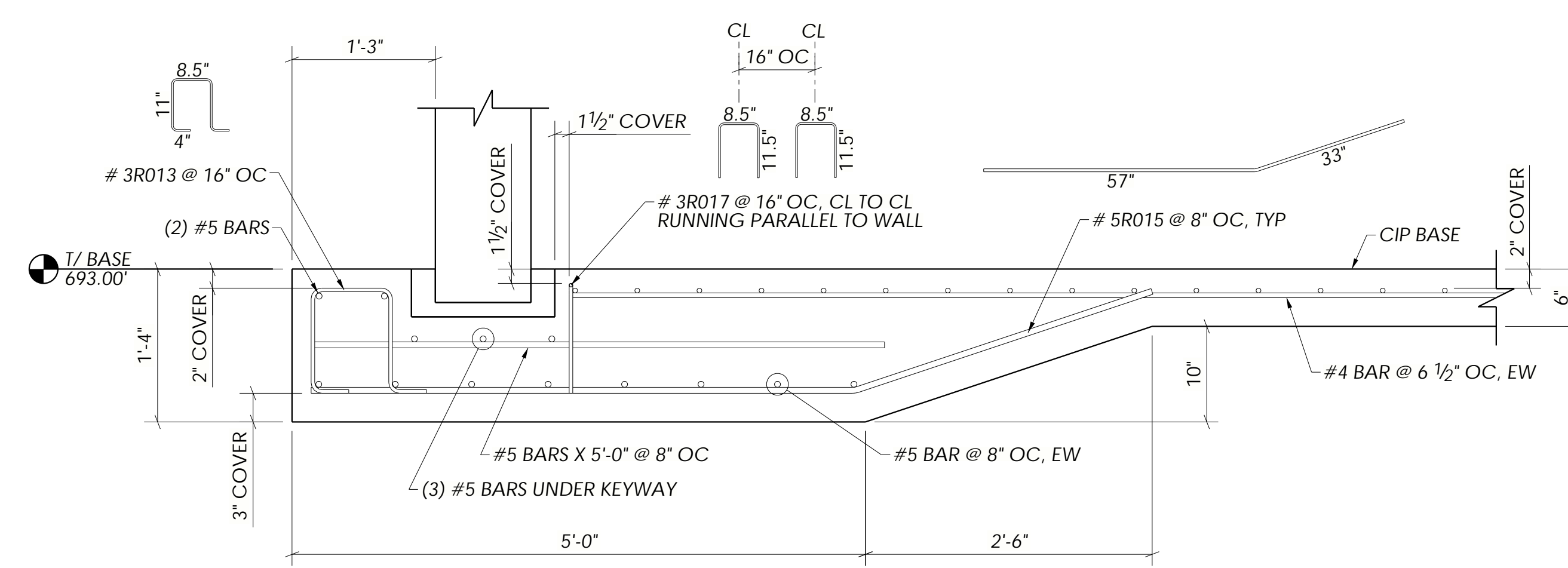


**A** TYPICAL BASE KEYWAY DETAIL  
NTS

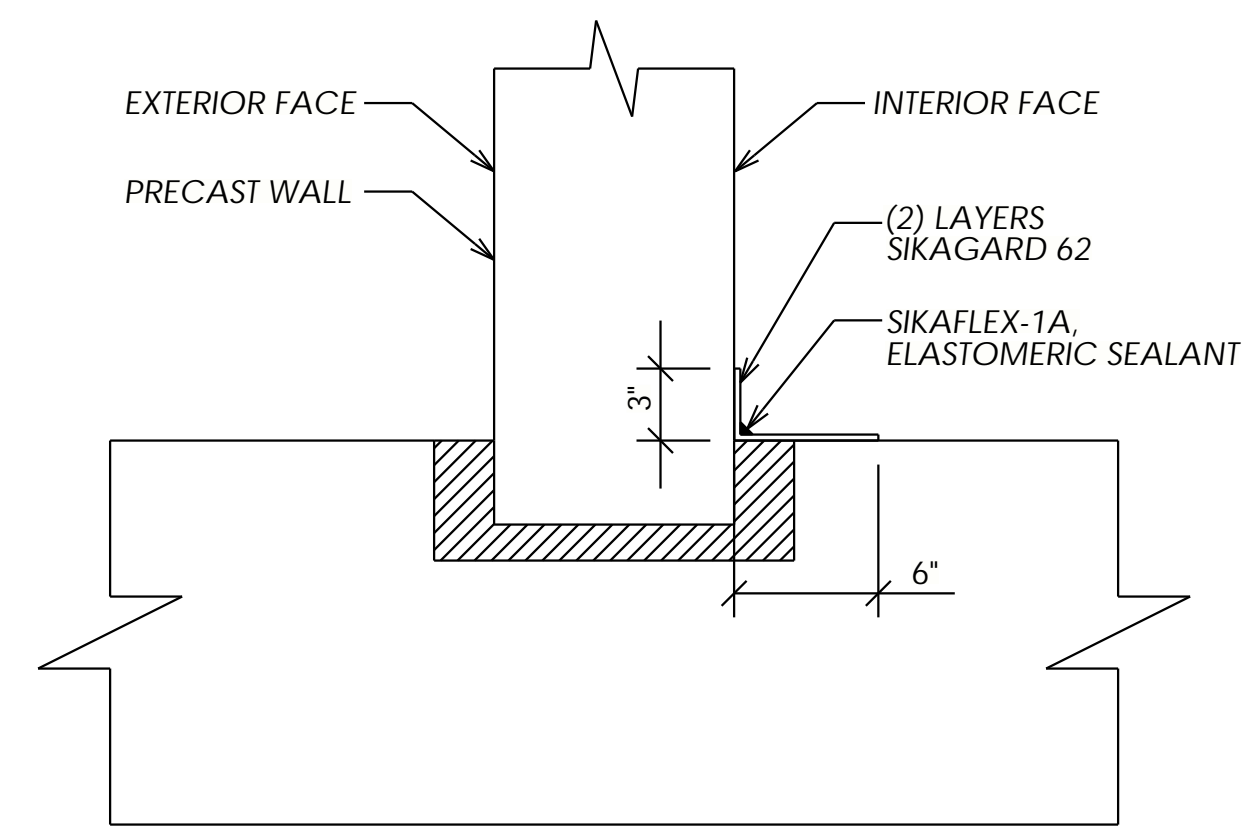


NOTE:  
IN THE EVENT THAT THE CONTRACT DOCUMENTS  
SPECIFY A THICKER LAYER OF CLEAN STONE, THEN  
USE THE THICKER LAYER

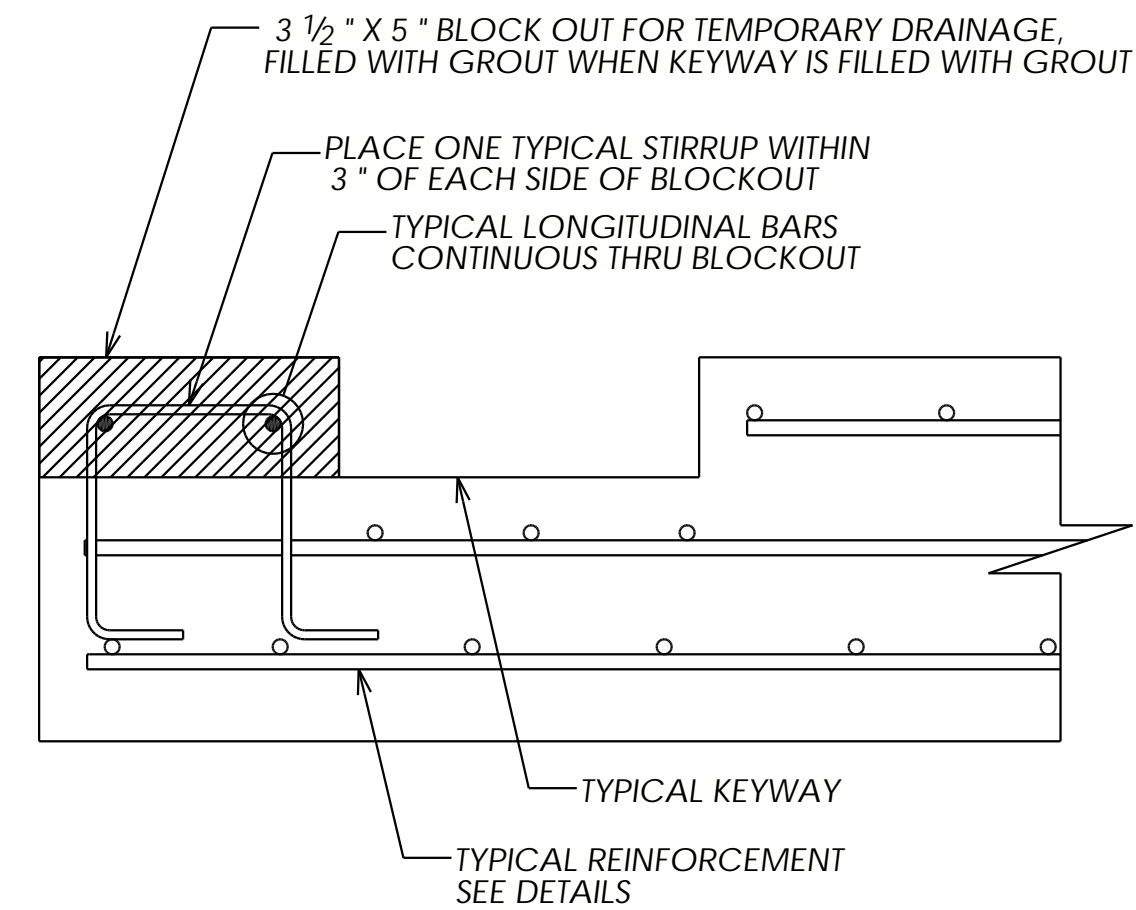
**D** TYPICAL SUB-BASE DETAIL  
NTS



**G** BASE REINFORCING DETAIL  
E102 E101

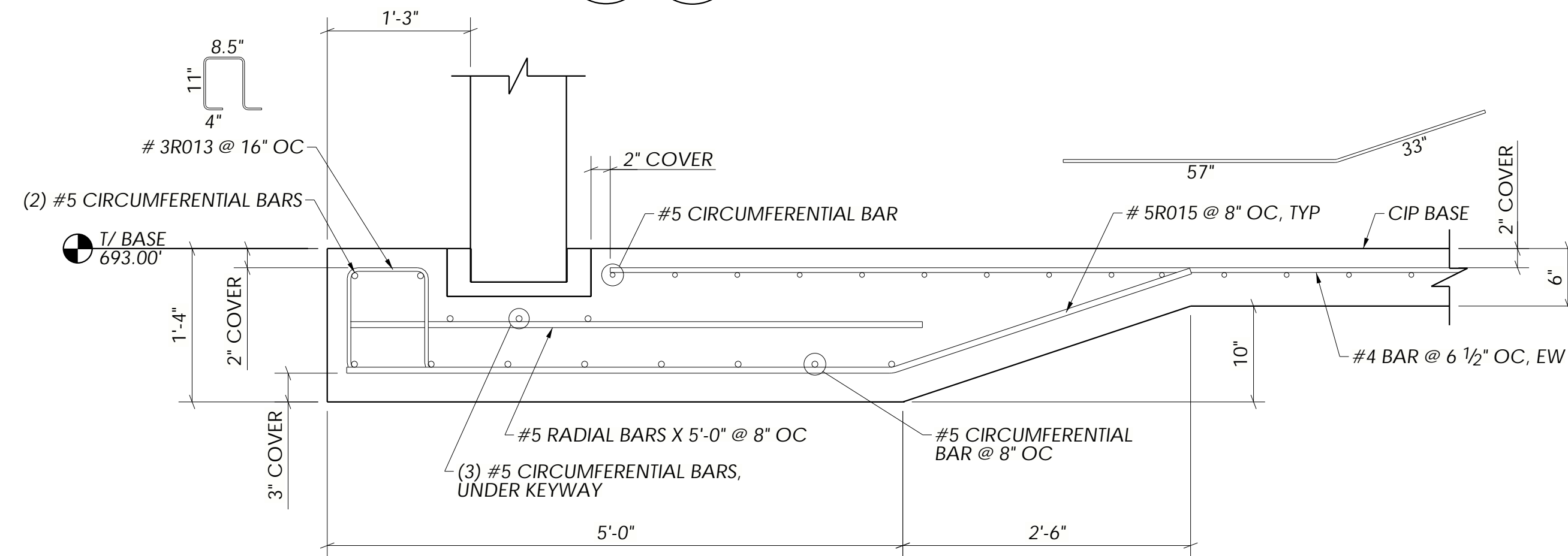


**B** TYPICAL EXTERIOR WALL-BASE SEALANT DETAIL  
NTS

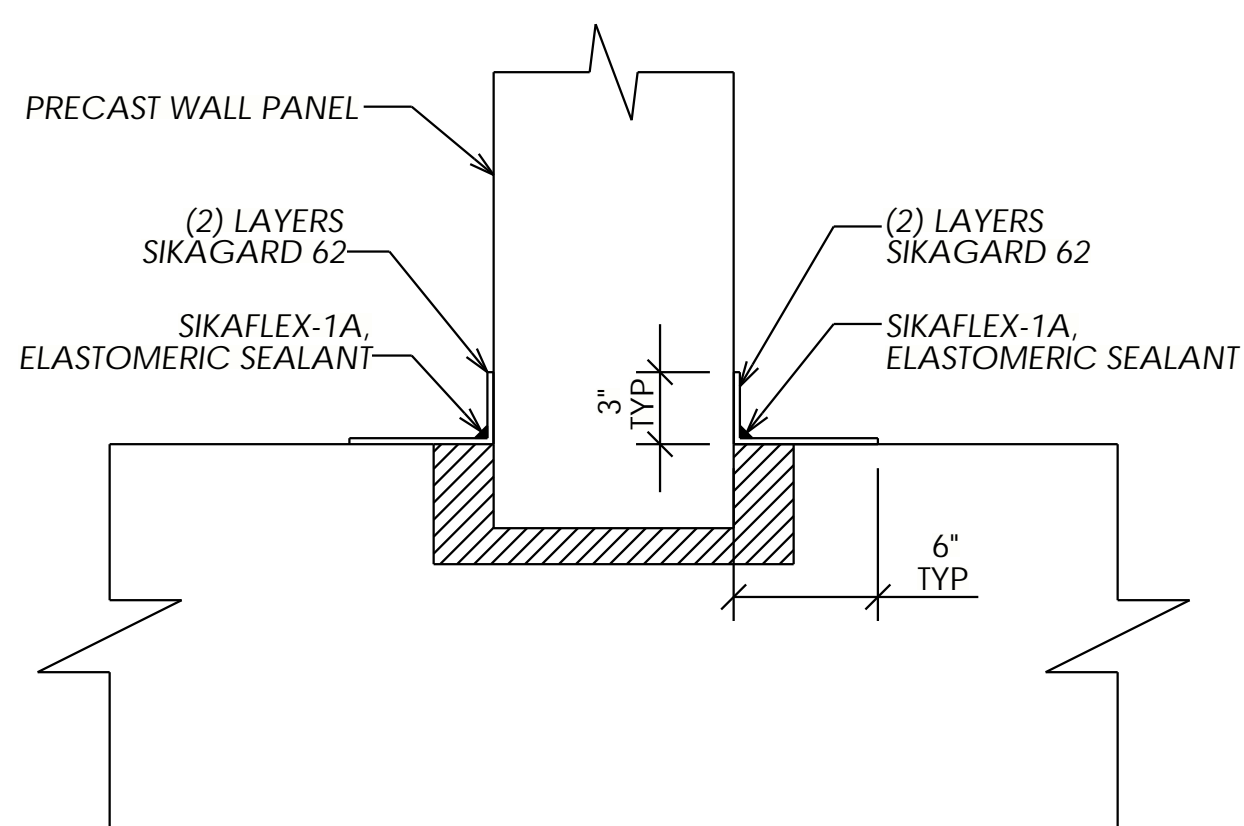


NOTE:  
1. QUANTITY & LOCATION TO BE DETERMINED IN FIELD

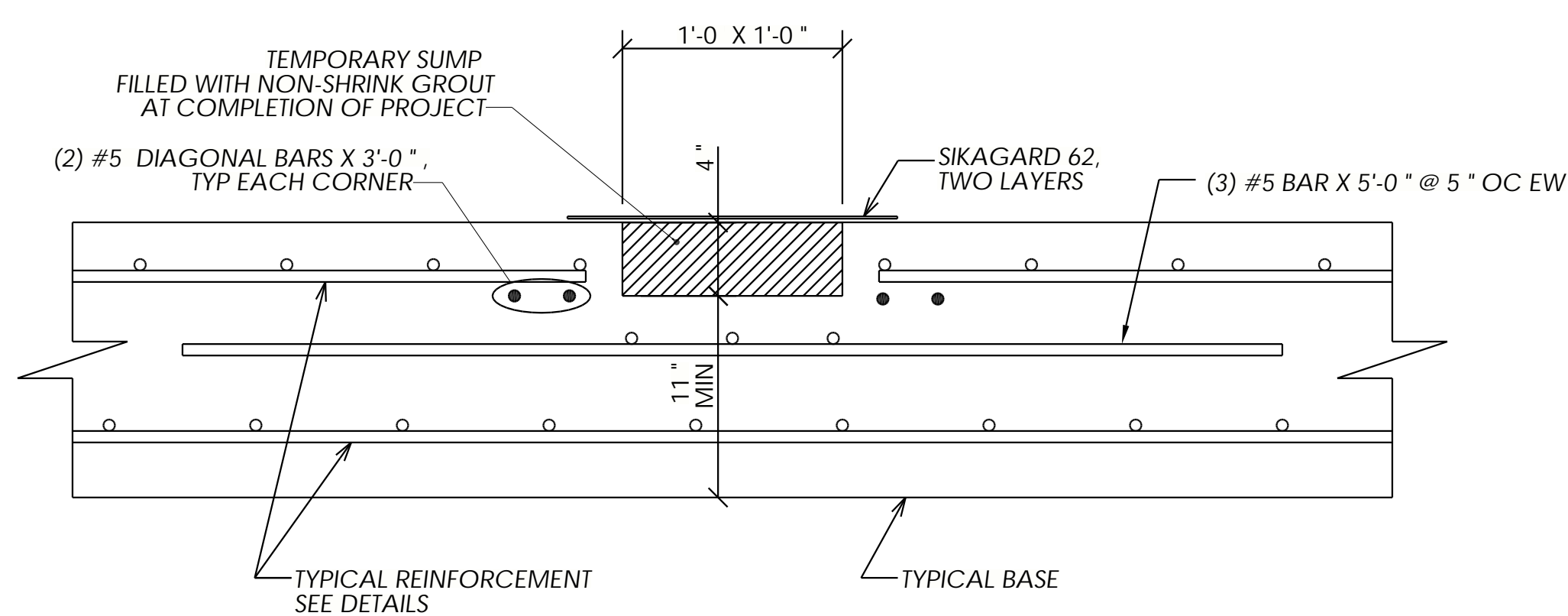
**E** TYPICAL TEMPORARY KEYWAY DRAINAGE DETAIL  
NTS



**H** BASE REINFORCING DETAIL  
E102 E101

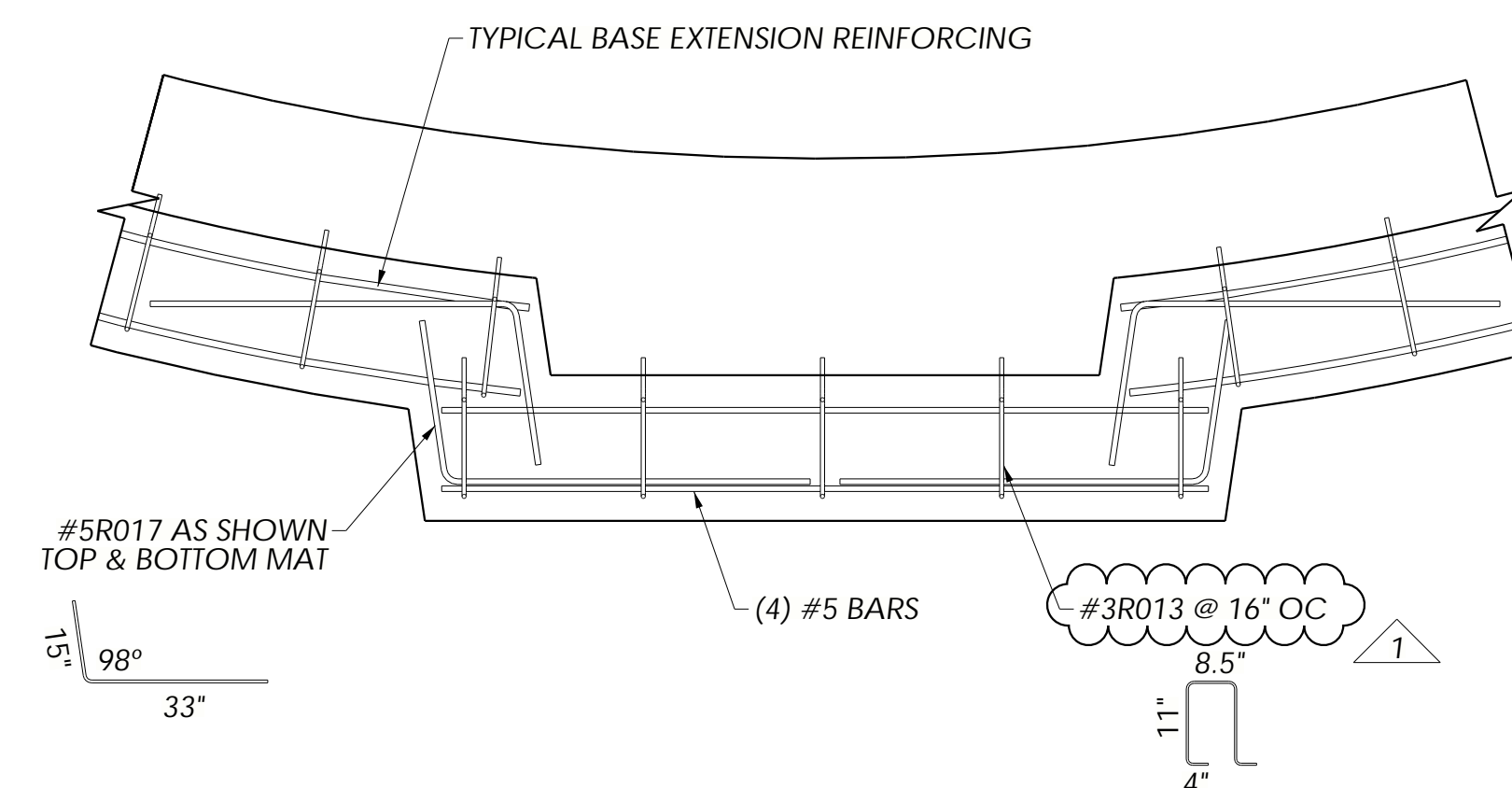


**C** TYPICAL INTERIOR WALL-BASE SEALANT DETAIL  
NTS



NOTE:  
1. QUANTITY & LOCATION TO BE DETERMINED IN FIELD

**F** TYPICAL TEMPORARY SUMP DETAIL  
NTS



**J** BUTTRESS PANEL KEYWAY EXTENSION REINFORCING  
NTS

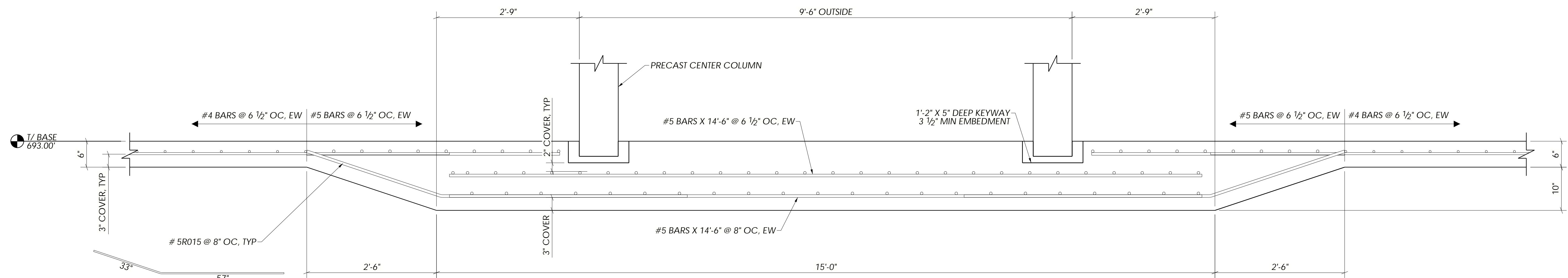
REBAR SPLICE LENGTH	
(f'c = 4000 psi)	
BAR SIZE	INCHES
3	18"
4	25"
5	31"
6	37"
7	54"
8	62"
9	70"
10	78"
11	87"

NO.	REVISIONS	DATE	BY
1	ISSUED FOR CONSTRUCTION	06/11/20	SDR

**Dutchland**  
INCORPORATED  
Engineered Concrete Environmental Solutions

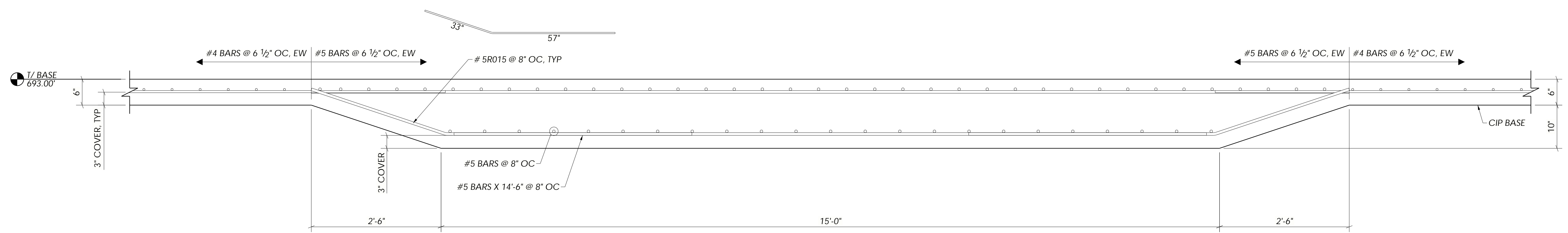
Project:  
TOWN OF MIDDLETOWN  
RAW WATER STORAGE  
IMPROVEMENTS  
RAW WATER STORAGE TANK  
FREDERICK COUNTY, MD

Job Number: 18039-WT  
Project Manager: GK  
Drawn By: SDR  
Checked By: JEP  
Issue Date: 04/21/2020  
Sheet No. E103



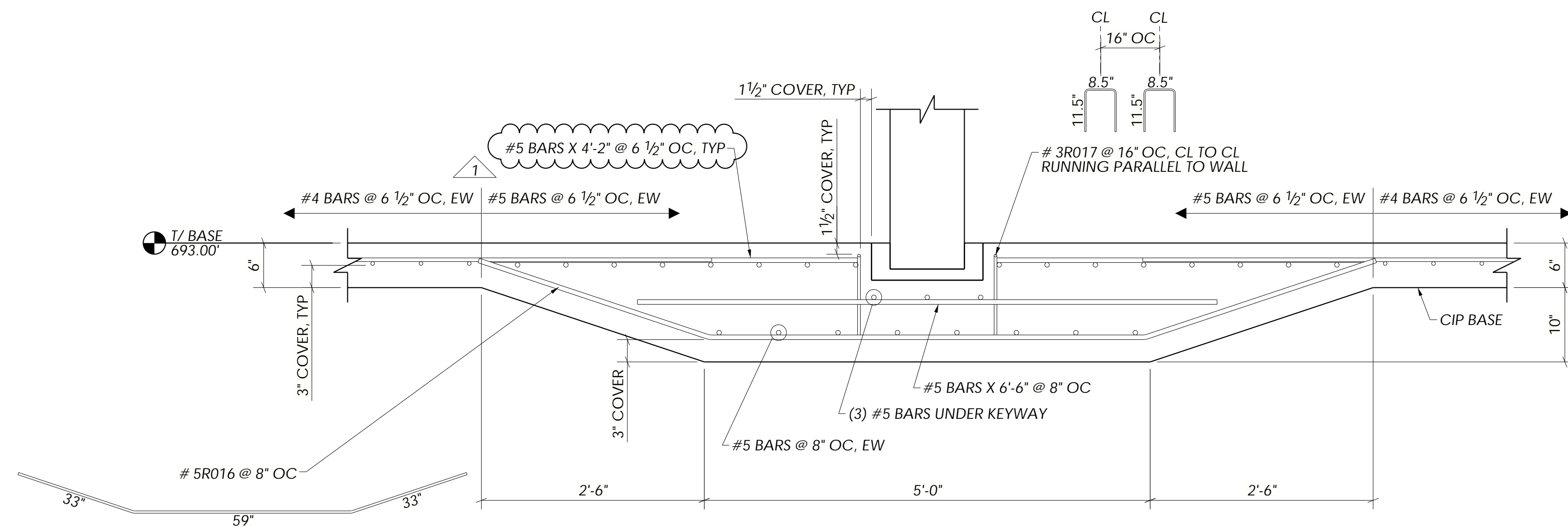
NOTE: PIPE & PIPE ENCASEMENT NOT SHOWN

**A A**  
E102 E101 **BASE REINFORCING DETAIL**



NOTE: PIPE & PIPE ENCASEMENT NOT SHOWN

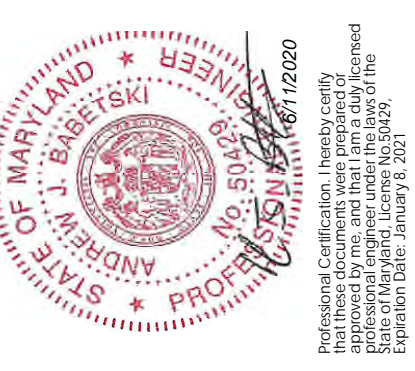
**B B**  
E102 E101 **BASE REINFORCING DETAIL**



**C C**  
E102 E101 **BASE REINFORCING DETAIL**

REBAR SPLICE LENGTH	
(f'c = 4000 psi)	
BAR SIZE	INCHES
3	18"
4	25"
5	31"
6	37"
7	54"
8	62"
9	70"
10	78"
11	87"

NO.	REVISIONS	DATE	BY
1	ISSUED FOR CONSTRUCTION	10/17/20	SDR



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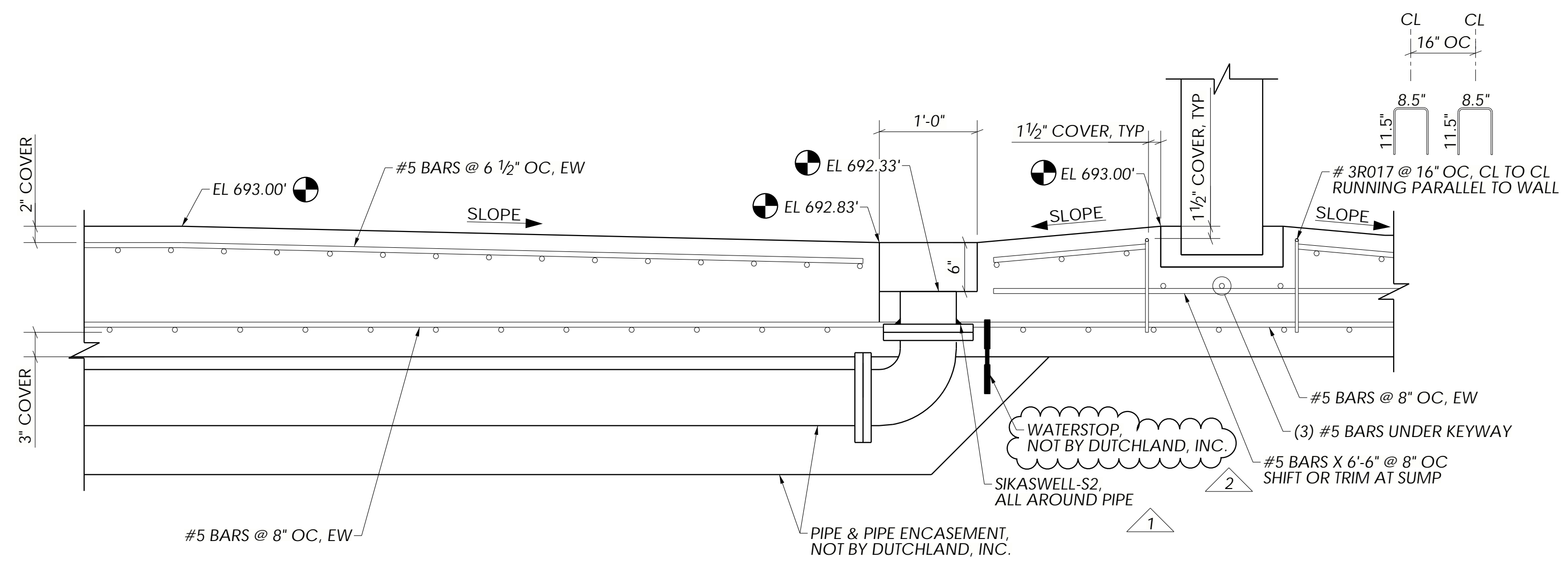


Project: TOWN OF MIDDLETOWN RAW WATER STORAGE IMPROVEMENTS  
RAW WATER STORAGE TANK  
FREDERICK COUNTY, MD

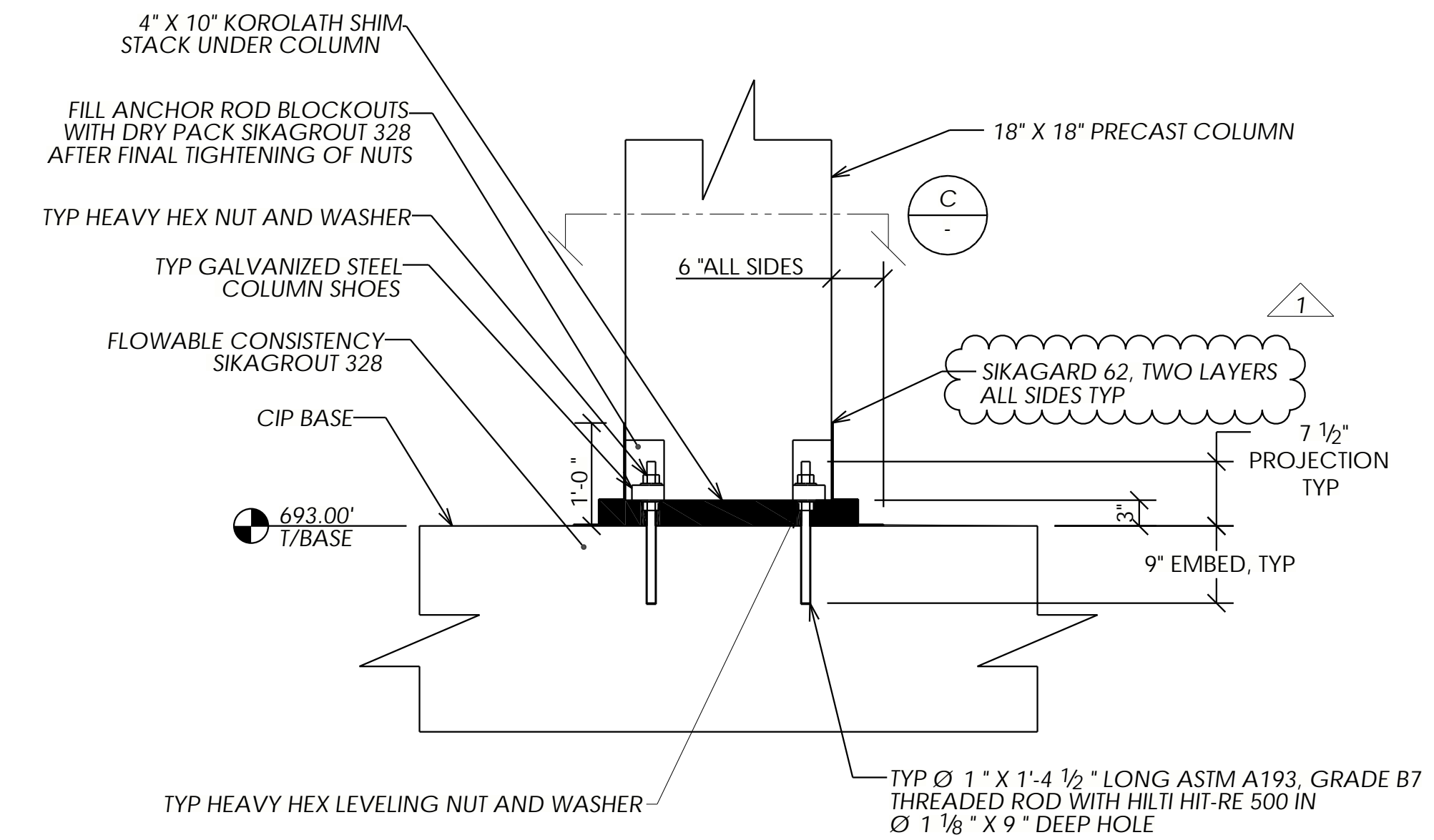
Job Number: 18039-WT  
Project Manager: GK  
Drawn By: SDR  
Checked By: JEP  
Issue Date: 04/21/2020  
Sheet No. E104



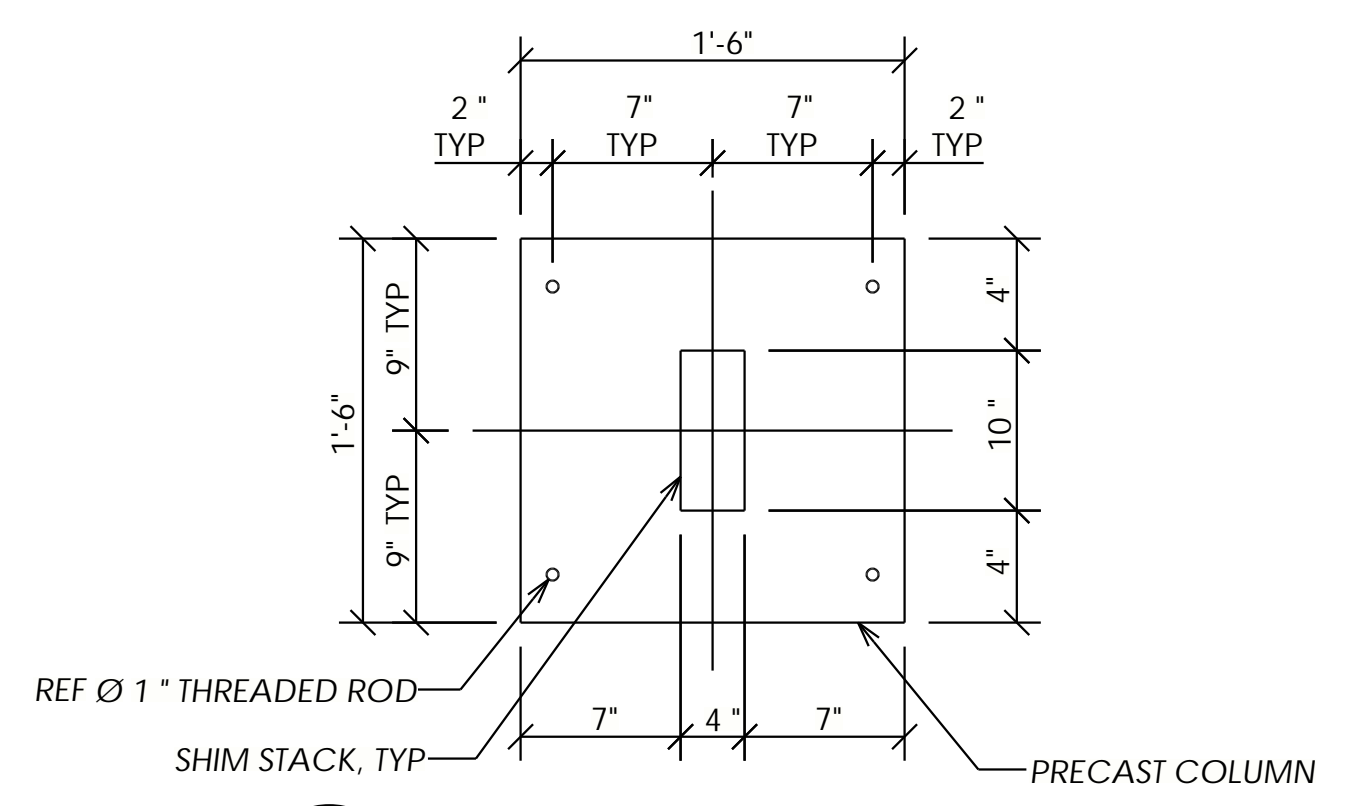




**A**  
E102 **A**  
E101 **BASE REINFORCING DETAIL**



**B**  
E102 **COLUMN-TO-BASE DETAIL**



**C**  
E102 **ANCHOR ROD LAYOUT DETAIL**

REBAR SPLICE LENGTH	
(f'c = 4000 psi)	
BAR SIZE	INCHES
3	18"
4	25"
5	31"
6	37"
7	54"
8	62"
9	70"
10	78"
11	87"

NO	REVISIONS	DATE	BY
1	REVISE & RESUBMIT	05/08/20	SDR
2	ISSUED FOR CONSTRUCTION	06/11/20	SDR



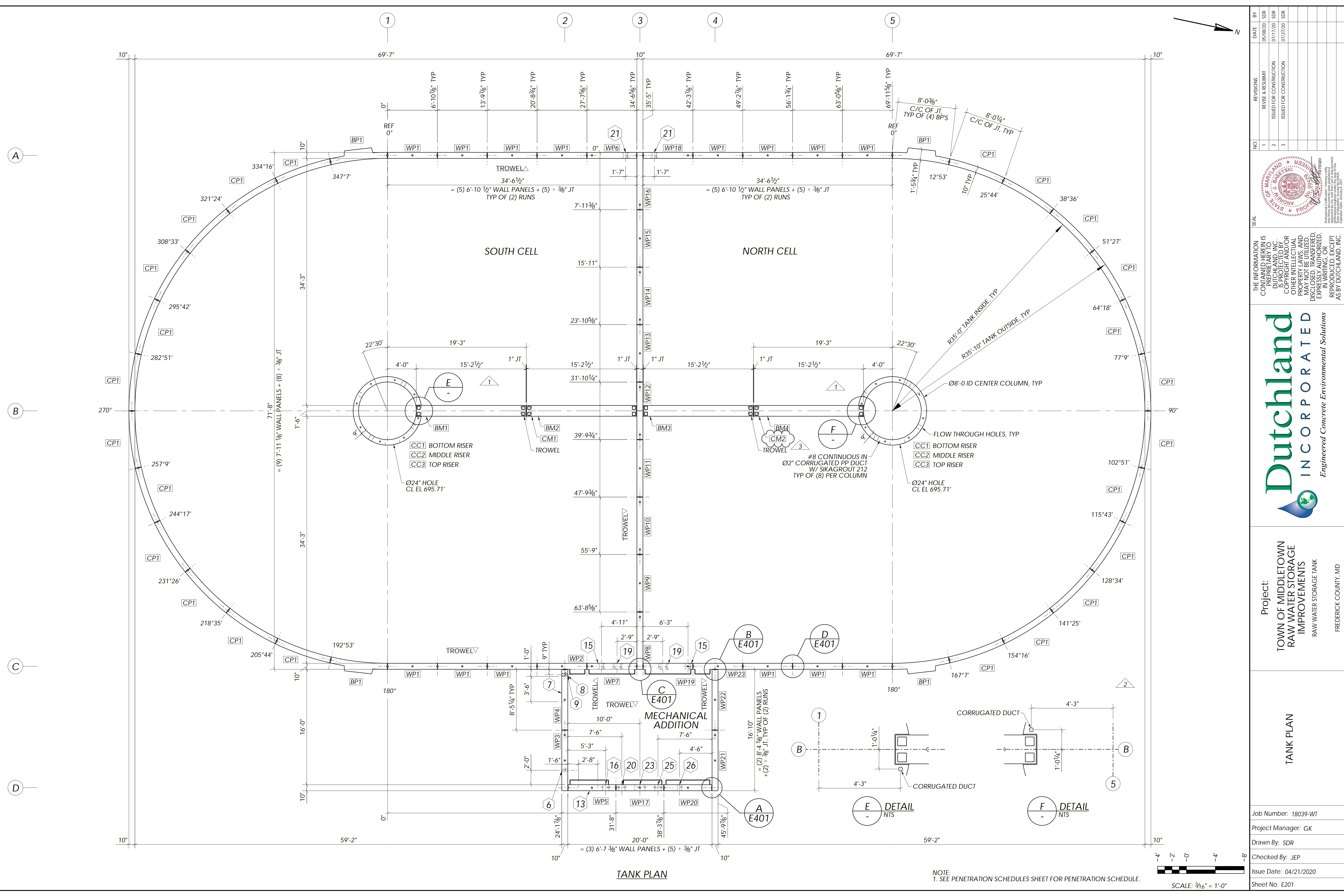
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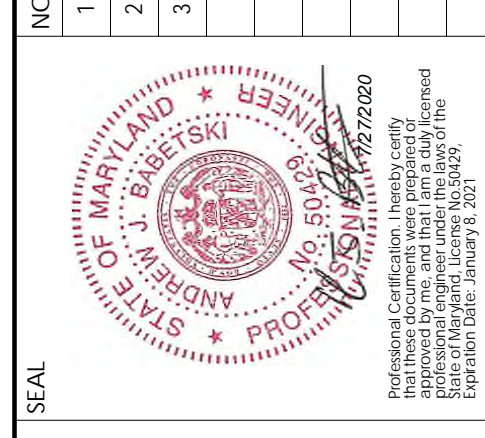
**Project:**  
TOWN OF MIDDLETOWN  
RAW WATER STORAGE  
IMPROVEMENTS  
RAW WATER STORAGE TANK  
FREDERICK COUNTY, MD

**BASE DETAILS**

Job Number: 18039-WT  
Project Manager: GK  
Drawn By: SDR  
Checked By: JEP  
Issue Date: 04/21/2020  
Sheet No. E106



NO.	REVISIONS	DATE	BY
1	REVISE & RESUBMIT	05/08/20	SDR
2	ISSUED FOR CONSTRUCTION	07/17/20	SDR
3	ISSUED FOR CONSTRUCTION	07/27/20	SDR



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**Project:**  
TOWN OF MIDDLETOWN  
RAW WATER STORAGE  
IMPROVEMENTS  
RAW WATER STORAGE TANK

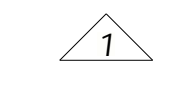
FREDERICK COUNTY, MD

**TANK PLAN**

Job Number: 18039-WT
Project Manager: GK
Drawn By: SDR
Checked By: JEP
Issue Date: 04/21/2020
Sheet No. E201



WALL PENETRATION SCHEDULE T/BASE 693.00'														
PROCESS PIPE/BLOCKOUT					PENETRATION									
#	QTY	SIZE	MATERIAL	DESCRIPTION	SIZE	MATERIAL	STYLE	LENGTH	WATERSTOP	LINING	CL ELEVATION	INV ELEVATION	SUPPLIED BY	NOTES
6	1	1 1/2"	PVC	CAPPED CONDUIT	3 1/2"	HDPE	WALL SLEEVE	0'-10"	6" FROM PE	-	709.00	-	DUTCHLAND, INC.	-
7	1	-	-	CLEAR DOOR OPENING	7'-0"H X 3'-6"W	-	BLOCKOUT	0'-10"	-	-	-	702.50	-	-
8	1	2"	PVC	WATER SUPPLY	4"	HDPE	WALL SLEEVE	0'-10"	6" FROM PE	-	698.00	-	DUTCHLAND, INC.	-
9	1	1"	PVC	ANTENNA CABLE	3"	HDPE	WALL SLEEVE	0'-10"	6" FROM PE	-	710.00	-	DUTCHLAND, INC.	-
13	1	-	-	LOUVER	2'-8"H X 2'-8"W	-	BLOCKOUT	0'-10"	-	-	-	706.50	-	-
15	2	6"	SS	INLET PIPE	6"	SS	TFL X TFL	0'-10"	6" FROM TFL	-	694.88	-	DUTCHLAND, INC.	-
16	1	6"	54 DIP	FIELD 'B' INFLUENT LINE	10"	HDPE	WALL SLEEVE	0'-10"	6" FROM PE	-	696.70	-	DUTCHLAND, INC.	-
19	2	12"	SS	EFFLUENT PIPE	12"	SS	TFL X TFL	0'-10"	6" FROM TFL	-	694.50	-	DUTCHLAND, INC.	-
20	1	6"	54 DIP	FIELD 'A' INFLUENT LINE	10"	HDPE	WALL SLEEVE	0'-10"	6" FROM PE	-	696.70	-	DUTCHLAND, INC.	-
21	2	6"	SS	OVERFLOW PIPE	6"	SS	TFL X TFL	0'-10"	6" FROM TFL	-	708.25	-	DUTCHLAND, INC.	-
23	1	12"	52 DIP	EFFLUENT MAIN	16"	HDPE	WALL SLEEVE	0'-10"	6" FROM PE	-	694.50	-	DUTCHLAND, INC.	-
25	1	6"	54 DIP	SPRING INFLUENT LINE	10"	HDPE	WALL SLEEVE	0'-10"	6" FROM PE	-	696.70	-	DUTCHLAND, INC.	-
26	1	4"	54 DIP	COMBINED INFLUENT LINE	6"	HDPE	WALL SLEEVE	0'-10"	6" FROM PE	-	696.70	-	DUTCHLAND, INC.	-



ROOF PENETRATION SCHEDULE														
PROCESS PIPE/BLOCKOUT					PENETRATION									
#	QTY	SIZE	MATERIAL	DESCRIPTION	SIZE	MATERIAL	STYLE	LENGTH	WATERSTOP	LINING	CL ELEVATION	INV ELEVATION	SUPPLIED BY	NOTES
1	6	6"	SS	SAMPLE PORT	6"	SS	FL X PE	2'-0"	18" FROM TFL	-	-	-	DUTCHLAND, INC.	-
3	4	-	-	HATCH OPENING	3'-0"H X 4'-0"W	-	BLOCKOUT	1'-0"	-	-	-	-	-	-
4	2	-	-	TANK VENT	24.000"	-	FORMED HOLE	1'-0"	-	-	-	-	-	-
10	1	-	-	STAIR OPENING	8'-0"H X 2'-6"W	-	BLOCKOUT	1'-0"	-	-	-	-	-	-
11	1	-	-	ROOF SCUTTLE	8'-0"H X 2'-6"W	-	BLOCKOUT	1'-0"	-	-	-	-	-	-
12	1	1 1/2"	PVC	WATER SUPPLY	3 1/2" NOM	-	NOM HOLE	1'-0"	-	-	-	-	DUTCHLAND, INC.	-
14	1	1 1/2"	PVC	SINK DRAIN	1 1/2"	PVC	PIPE W/ COUPLINGS	1'-0"	-	-	-	-	DUTCHLAND, INC.	-
17	2	4"	PVC	FLOOR DRAIN	6"	PVC	CAST-IN	1'-0"	-	-	-	-	DUTCHLAND, INC.	-
18	1	-	-	GRATE OPENING	1'-6"L X 1'-6"W	-	BLOCKOUT	1'-0"	-	-	-	-	-	-
22	2	-	-	VALVE ACCESS OPENING	2'-0"H X 2'-0"W	-	BLOCKOUT	1'-0"	-	-	-	-	-	-
24	1	-	-	EXHAUST FAN	1'-0"L X 1'-0"W	-	BLOCKOUT	1'-0"	-	-	-	-	-	-
27	1	-	-	HVAC OPENING	1'-0"H X 0'-10"W	-	BLOCKOUT	1'-0"	-	-	-	-	-	-

NO	REVISIONS	DATE	BY
1	REVISE & RESUBMIT	05/08/20	SDR
2	ISSUED FOR CONSTRUCTION	06/11/20	SDR



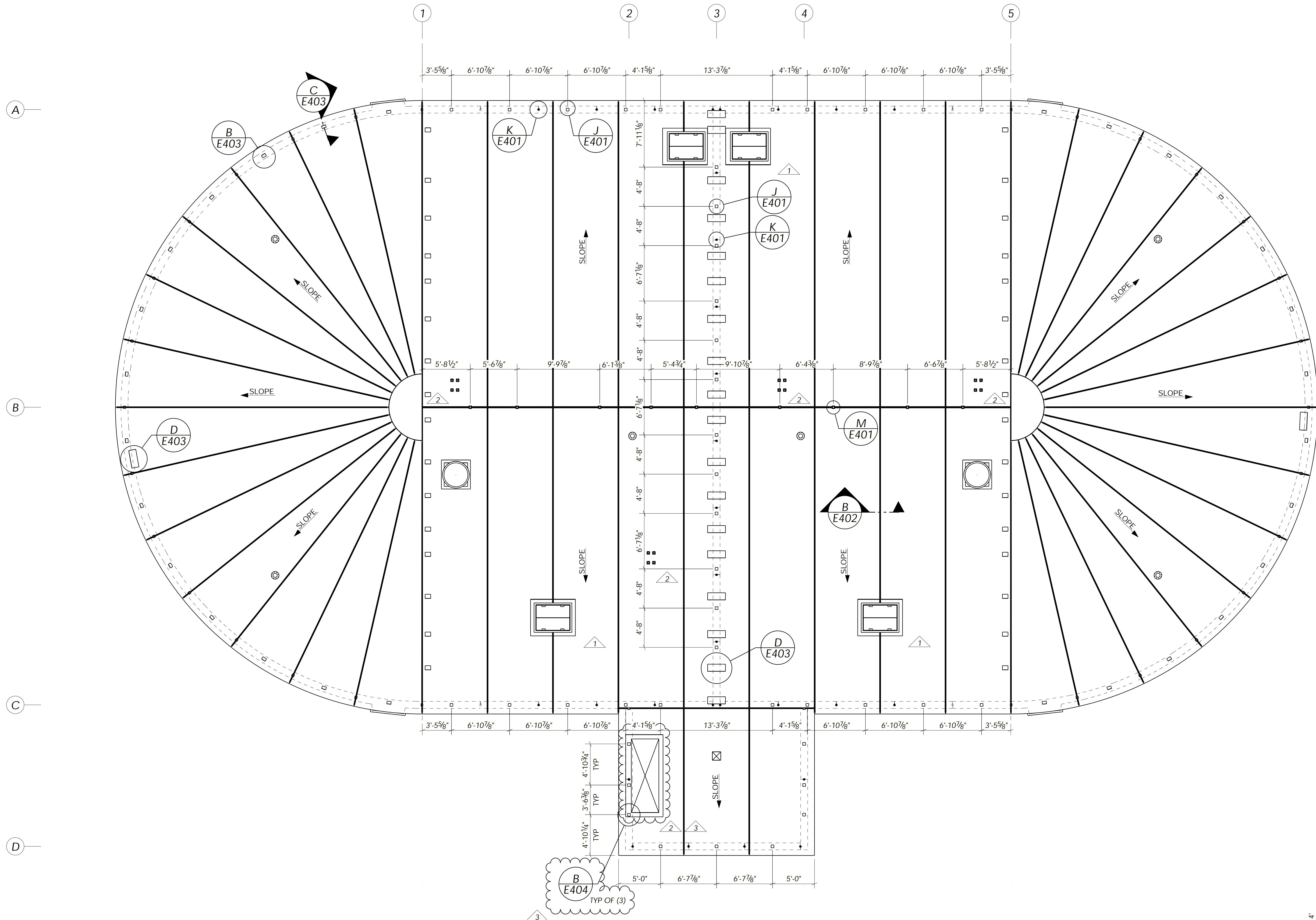
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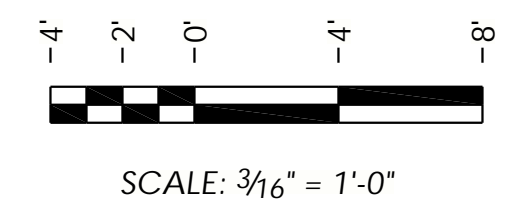
Project:  
TOWN OF MIDDLETOWN  
RAW WATER STORAGE  
IMPROVEMENTS  
RAW WATER STORAGE TANK  
FREDERICK COUNTY, MD

PENETRATION SCHEDULES

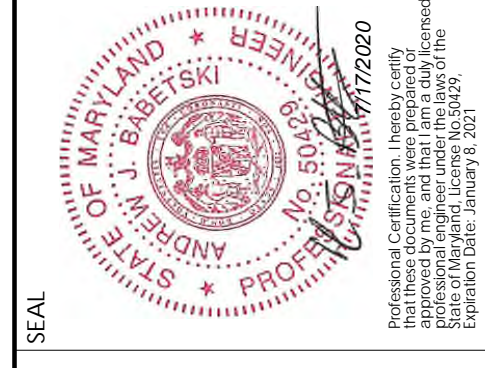
Job Number: 18039-WT  
Project Manager: GK  
Drawn By: SDR  
Checked By: JEP  
Issue Date: 04/21/2020  
Sheet No: E203



ROOF CONNECTION PLAN



NO.	REVISIONS	DATE	BY
1	REVISE & RESUBMIT	05/08/20	SDR
2	ISSUED FOR CONSTRUCTION	06/11/20	SDR
3	ISSUED FOR CONSTRUCTION	07/17/20	SDR



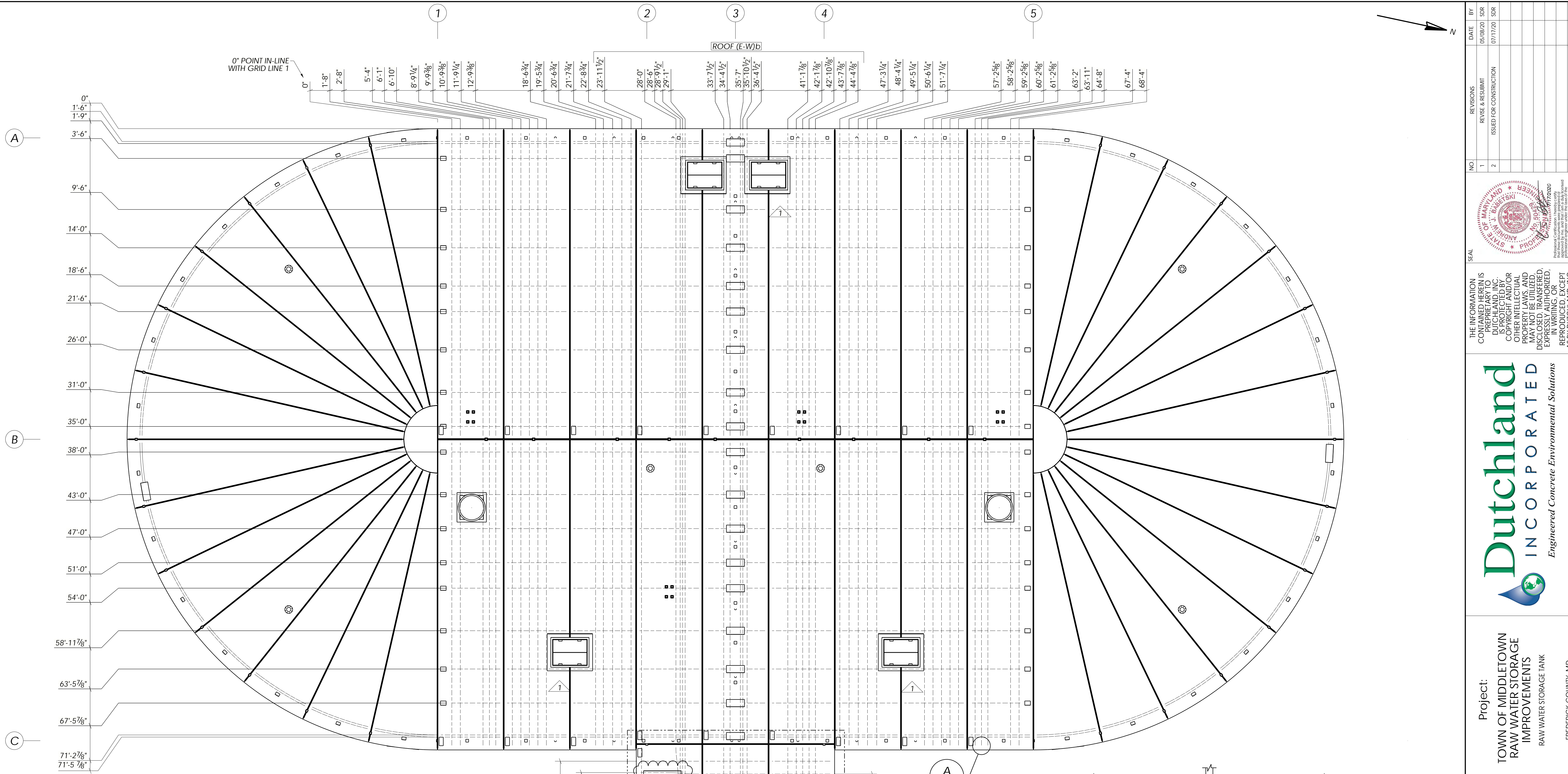
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Project:  
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RAW WATER STORAGE  
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RAW WATER STORAGE TANK  
FREDERICK COUNTY, MD

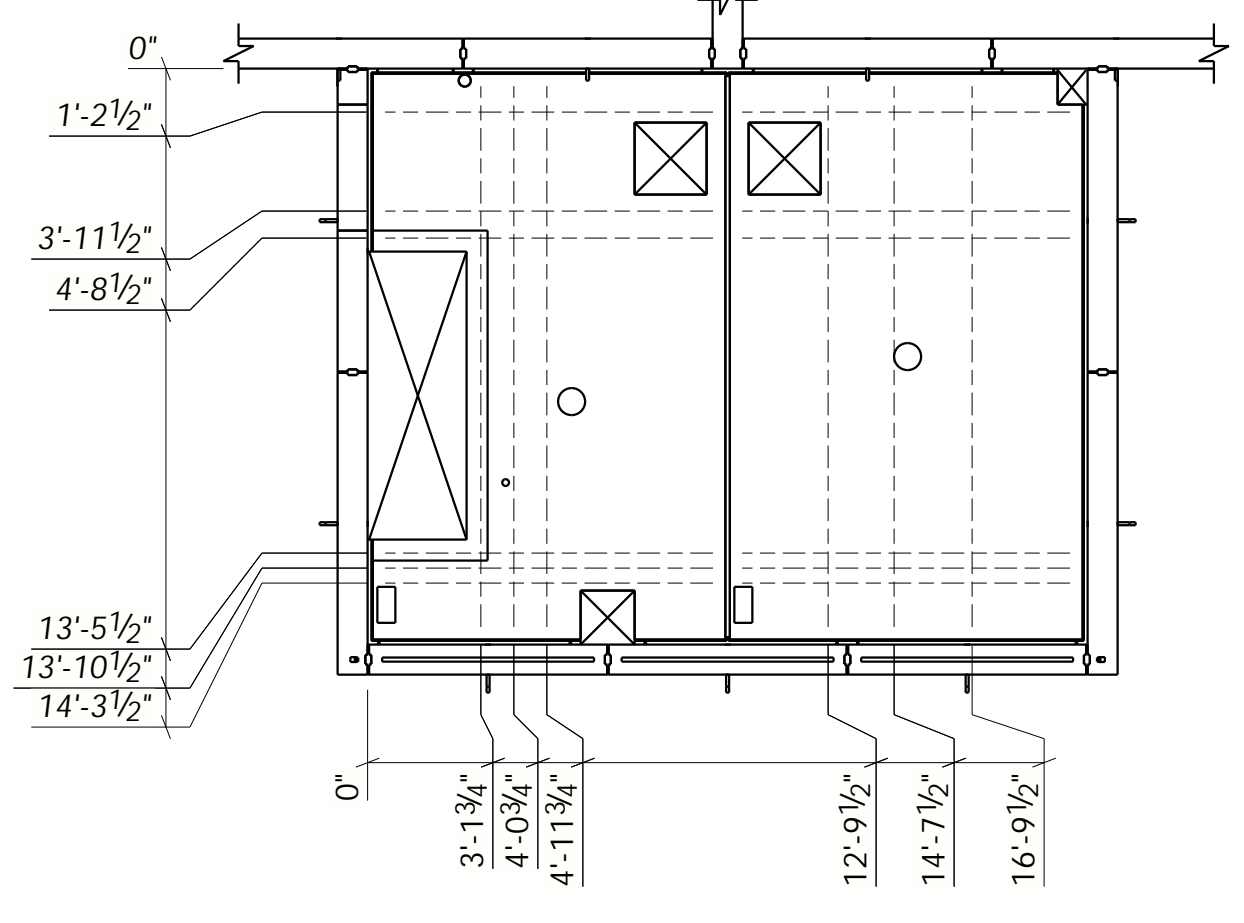
ROOF CONNECTION PLAN

Job Number: 18039-WT  
Project Manager: GK  
Drawn By: SDR  
Checked By: JEP  
Issue Date: 04/21/2020  
Sheet No. E204



FLOOR/ROOF TENDON ELONGATION CHART					
JACKING FORCE PER TENDON = 45 KIPS					
FLOOR/ROOF RUN	TENDON LENGTH	MINIMUM	TARGET	MAXIMUM	QTY PER RUN
ROOF (N-S) Perim.	89' - 0"	6 5/8"	7 1/8"	7 3/4"	2
ROOF (N-S)	70' - 0"	5 1/8"	5 5/8"	6 1/8"	16
ROOF (E-W)a	73' - 0"	5 3/8"	5 7/8"	6 3/8"	15
ROOF (E-W)b	89' - 10"	6 5/8"	7 1/4"	7 3/4"	15
ROOF (MECH)	23' - 4"	1 3/8"	1 3/4"	2"	4
FLOOR (N-S)	21' - 8"	1 1/2"	1 3/4"	1 3/4"	6
FLOOR (E-W)	17' - 8"	1 1/8"	1 1/4"	1 3/8"	6

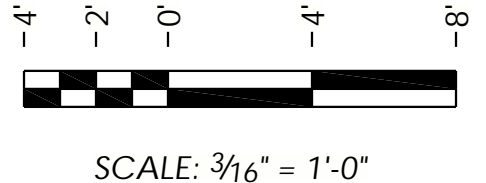
ROOF TENDON PLAN



FLOOR TENDON PLAN @ EL 702.50'

**ROOF/FLOOR TENDON-STRESSING PROCEDURE FROM ONE END ONLY**

- MINIMUM GROUT STRENGTH REQUIRED BEFORE STRESSING = 2,500 PSI.
- AFTER ALL TENDONS ARE INSTALLED AND THE SHIMS ARE PLACED, THE TWO EXTERIOR TENDONS IN EACH RUN SHALL BE STRESSED TO INITIAL JACKING FORCE OF 22.5 KIPS, WHICH IS 50% OF FINAL JACKING FORCE.
- AFTER THE SEAMS ARE GROUTED, MARK THE JACKING END OF EACH TENDON WITH A REFERENCE POINT TO MEASURE ELONGATIONS. THE TWO EXTERIOR TENDONS WILL START ELONGATION MEASUREMENT AT 50% JACKING FORCE AND THE REMAINDER OF THE STRAND WILL START AT ZERO JACKING FORCE. THE DISTANCE FROM THE ANCHOR PLATE TO THE REFERENCE MARK SHALL BE MEASURED AND RECORDED AT EACH TENDON.
- STRESS THE REMAINING TENDONS TO THE INITIAL JACKING FORCE OF 22.5 KIPS, WHICH IS 50% OF FINAL JACKING FORCE.
- AFTER INITIAL JACKING, STRESS ALL TENDONS TO THE FINAL JACKING FORCE OF 45 KIPS.
- AFTER ALL TENDONS HAVE BEEN STRESSED TO THE FINAL JACKING FORCE, THE DISTANCE FROM THE ANCHOR PLATE TO THE REFERENCE MARK SHALL BE MEASURED AND RECORDED AT THE JACKING END OF EACH TENDON. THE DIFFERENCE BETWEEN THE TWO MEASUREMENTS FOR EACH TENDON IS THE ELONGATION.
- IF ELONGATIONS DO NOT FALL WITHIN THE LIMITS AFTER STRESSING, DO NOT CUT THE TAILS AND CONTACT THE DUTCHLAND, INC. ENGINEER FOR RESOLUTION.



	DATE	BY	NO.	REVISIONS	DATE	BY
	05/08/20	SDR	1	REVISE & RESUBMIT	07/17/20	SDR
			2	ISSUED FOR CONSTRUCTION		

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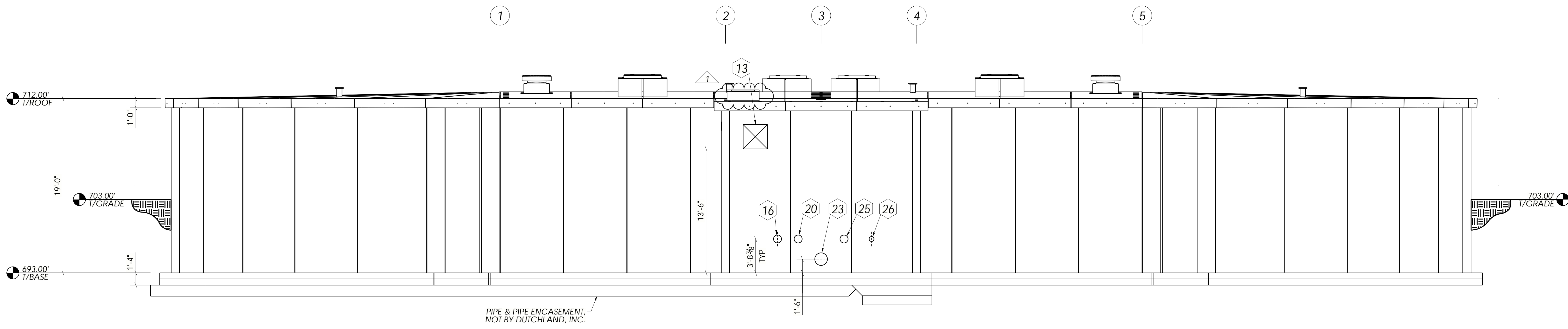
**Dutchland**  
INCORPORATED  
*Engineered Concrete Environmental Solutions*

**Project:** TOWN OF MIDDLETOWN RAW WATER STORAGE IMPROVEMENTS  
 RAW WATER STORAGE TANK  
 FREDERICK COUNTY, MD

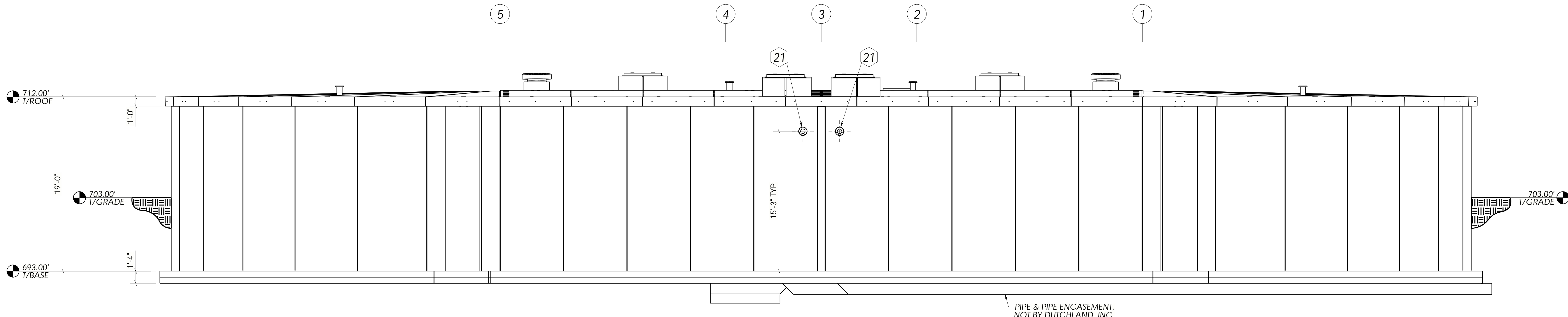
**FLOOR & ROOF TENDONS**

Job Number: 18039-WT  
 Project Manager: GK  
 Drawn By: SDR  
 Checked By: JEP  
 Issue Date: 04/21/2020  
 Sheet No. E205





E  
E002 ELEVATION



W  
E002 ELEVATION

NO.	REVISIONS	DATE	BY
1	ISSUED FOR CONSTRUCTION	06/11/20	SDR



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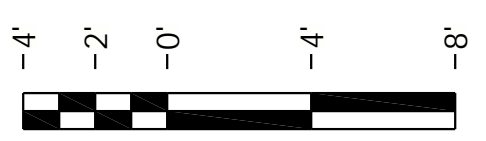


Project:  
TOWN OF MIDDLETOWN  
RAW WATER STORAGE  
IMPROVEMENTS  
RAW WATER STORAGE TANK  
FREDERICK COUNTY, MD

ELEVATIONS

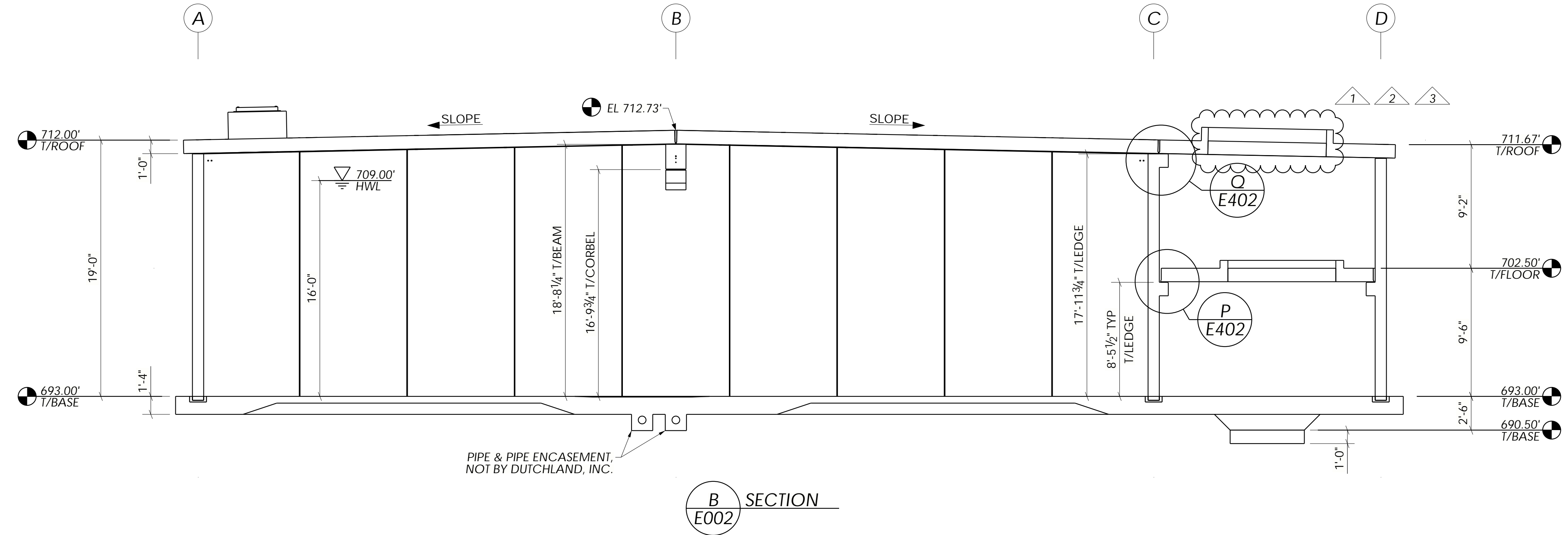
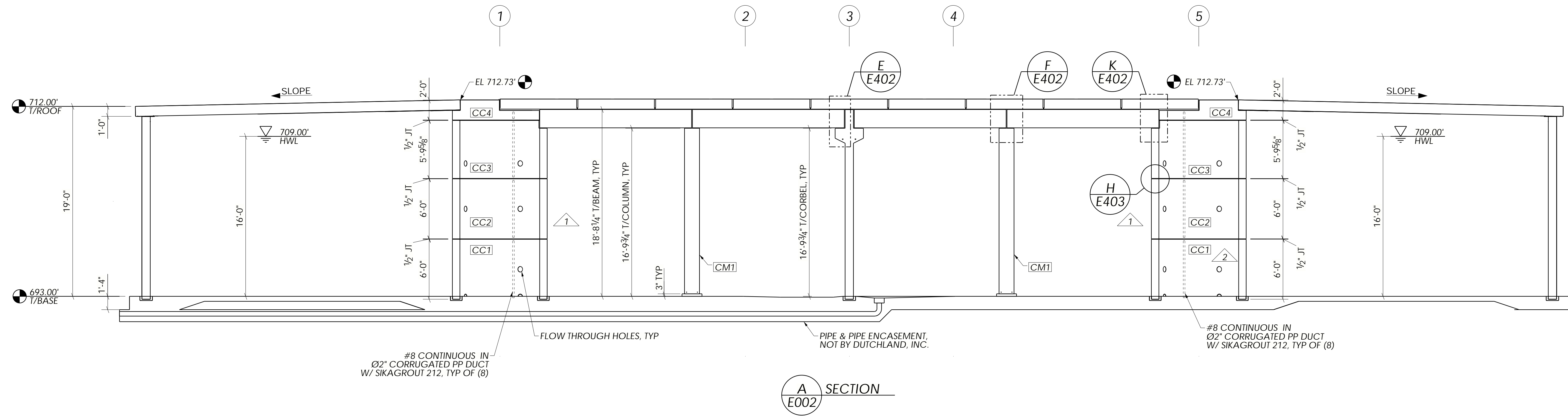
Job Number: 18039-WT
Project Manager: GK
Drawn By: SDR
Checked By: JEP
Issue Date: 04/21/2020
Sheet No. E302

NOTE:  
1. SEE PENETRATION SCHEDULES SHEET FOR PENETRATION SCHEDULE.



SCALE: 3/16" = 1'-0"





NO	REVISIONS	DATE	BY
1	REVISE & RESUBMIT	05/08/20	SDR
2	ISSUED FOR CONSTRUCTION	06/11/20	SDR
3	ISSUED FOR CONSTRUCTION	07/17/20	SDR



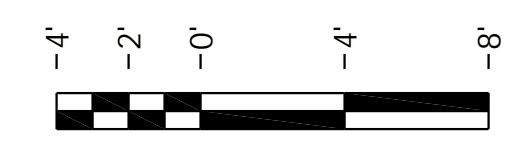
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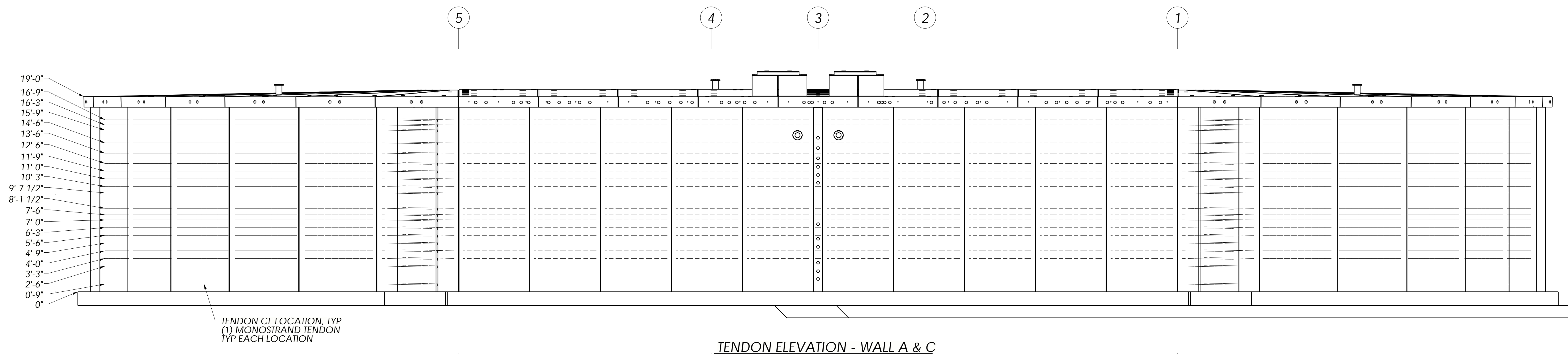


Project:  
TOWN OF MIDDLETOWN  
RAW WATER STORAGE  
IMPROVEMENTS  
RAW WATER STORAGE TANK  
FREDERICK COUNTY, MD

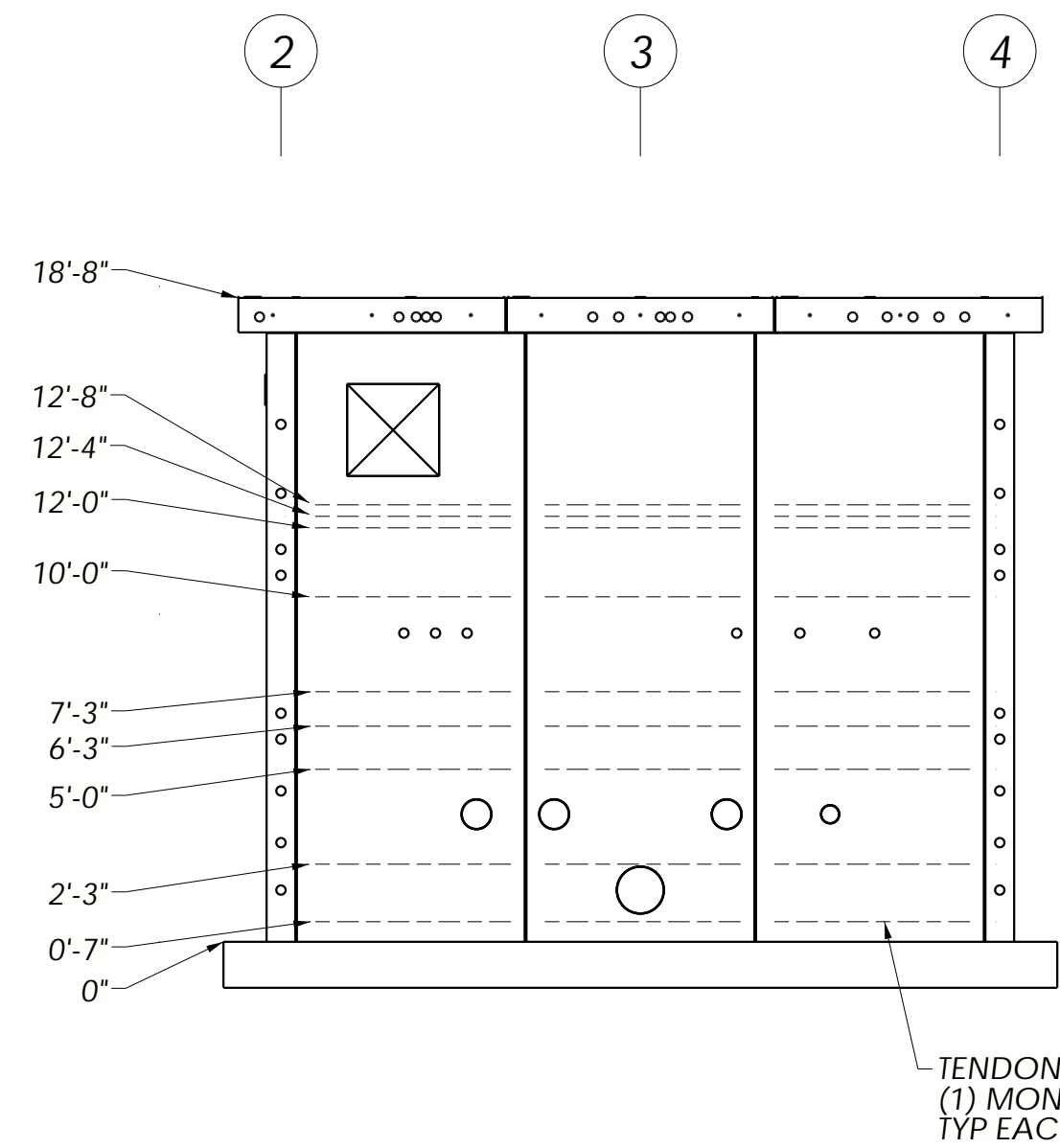
SECTIONS

Job Number: 18039-WT
Project Manager: GK
Drawn By: SDR
Checked By: JEP
Issue Date: 04/21/2020
Sheet No. E303

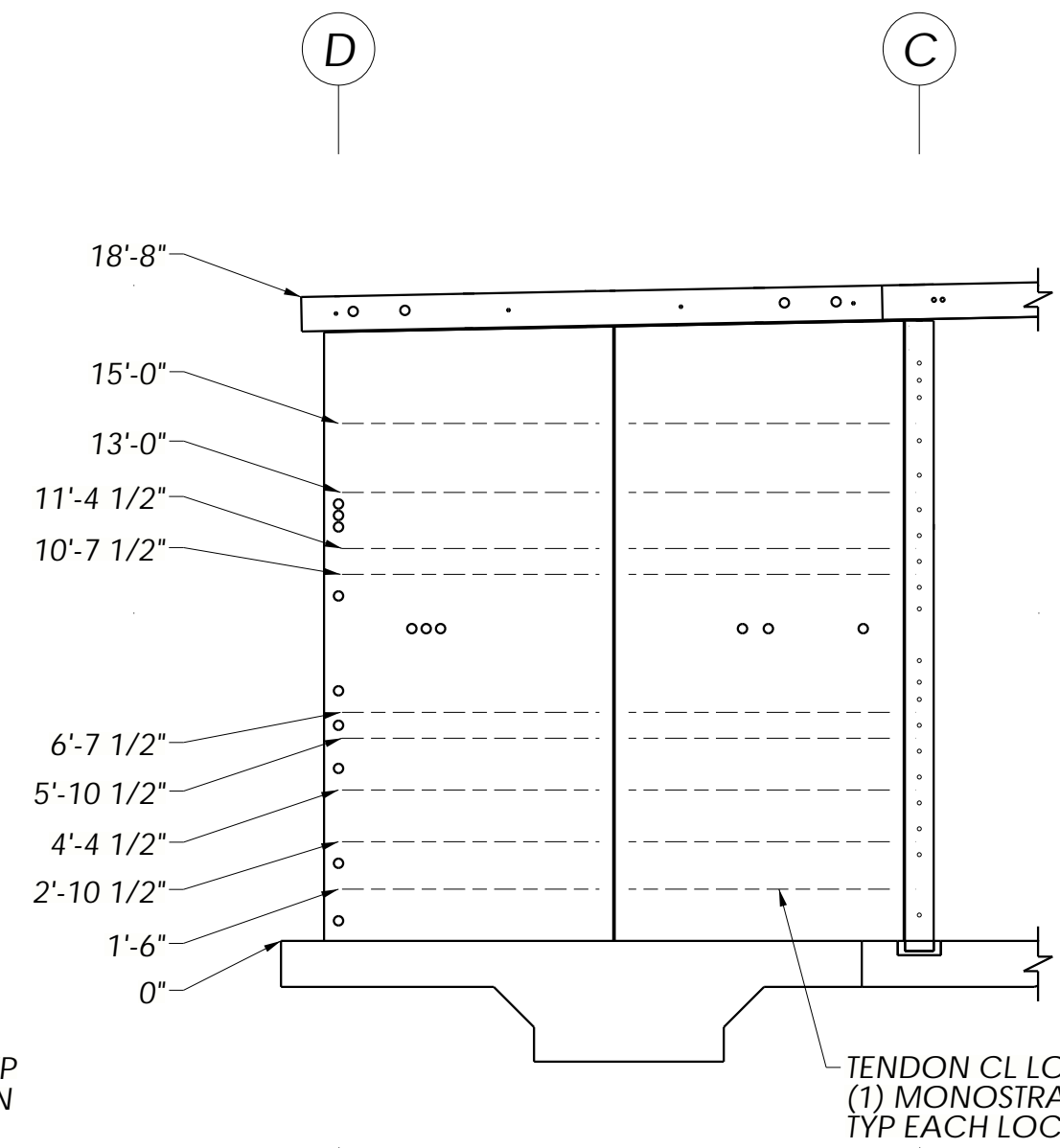




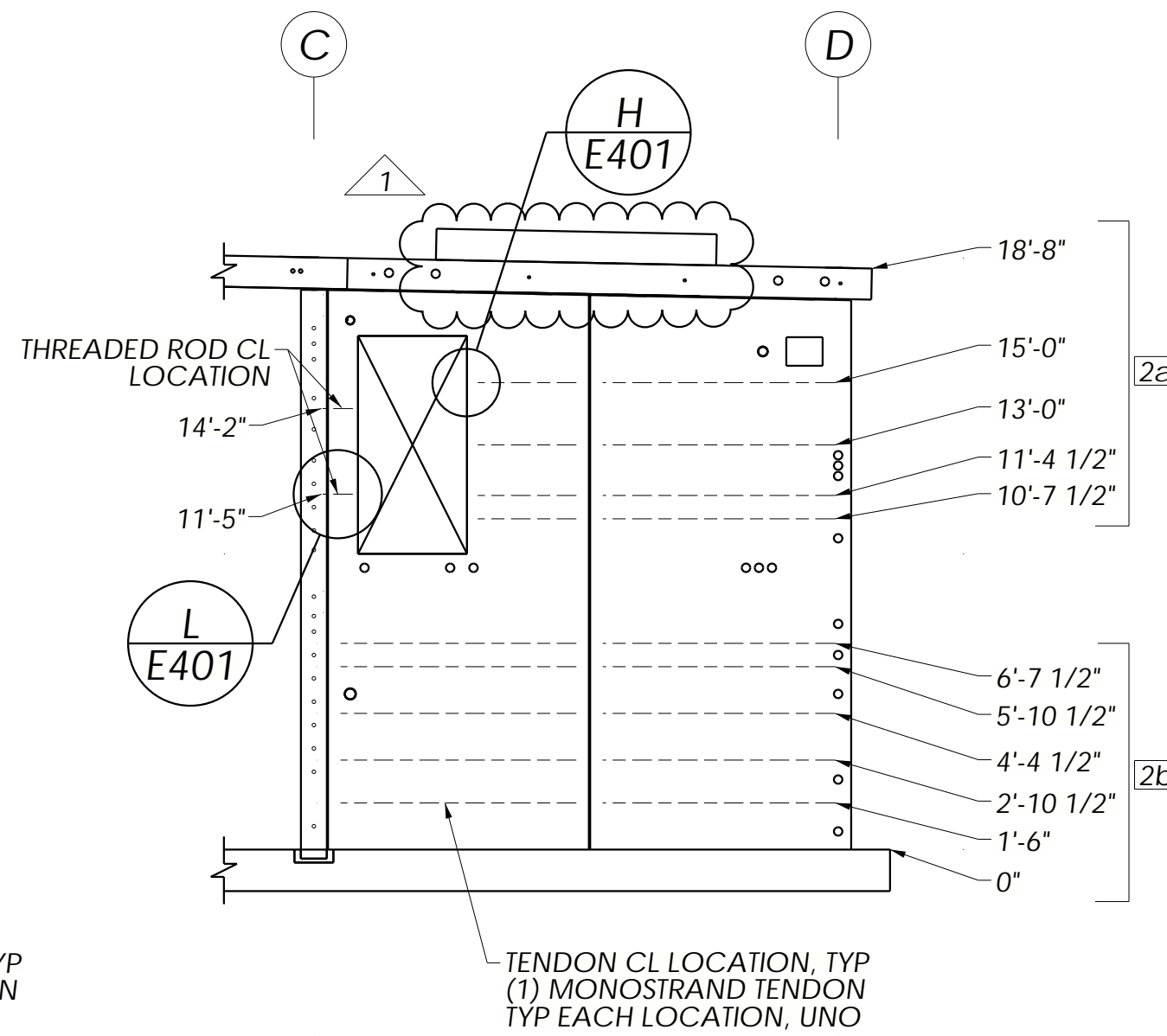
TENDON ELEVATION - WALL A & C



TENDON ELEVATION - WALL D



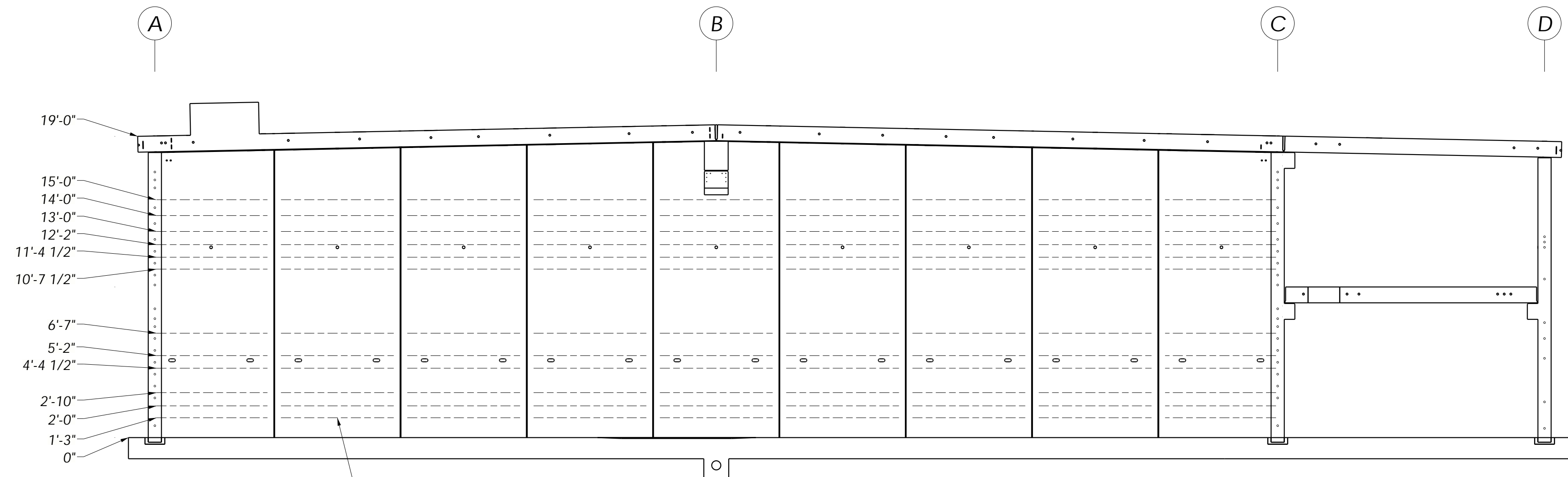
TENDON ELEVATION - WALL 4



TENDON ELEVATION - WALL 2

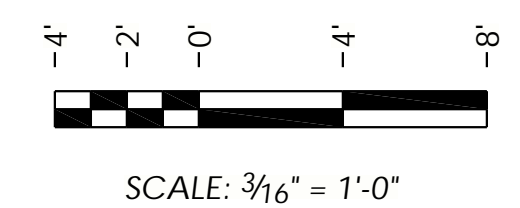
- FLAT WALL TENDON-STRESSING PROCEDURE FROM ONE END ONLY**
1. MINIMUM GROUT STRENGTH REQUIRED BEFORE STRESSING = 2,500 PSI.
  2. START ELONGATION MEASUREMENT AT ZERO JACKING FORCE. JACKING END OF EACH TENDON SHALL BE MARKED WITH A REFERENCE POINT TO MEASURE ELONGATIONS. THE DISTANCE FROM THE ANCHOR PLATE TO THE REFERENCE MARK SHALL BE MEASURED AND RECORDED AT EACH TENDON.
  3. STRESS ALL TENDONS TO THE INITIAL JACKING FORCE OF 22.5 KIPS, WHICH IS 50% OF FINAL JACKING FORCE.
  4. AFTER INITIAL JACKING, STRESS ALL TENDONS TO THE FINAL JACKING FORCE OF 45 KIPS.
  5. AFTER ALL TENDONS HAVE BEEN STRESSED TO THE FINAL JACKING FORCE, THE DISTANCE FROM THE ANCHOR PLATE TO THE REFERENCE MARK SHALL BE MEASURED AND RECORDED AT THE JACKING END OF EACH TENDON. THE DIFFERENCE BETWEEN THE TWO MEASUREMENTS FOR EACH TENDON IS THE ELONGATION.
  6. IF ELONGATIONS DO NOT FALL WITHIN THE LIMITS AFTER STRESSING, DO NOT CUT THE TAILS AND CONTACT THE DUTCHLAND, INC. ENGINEER FOR RESOLUTION.

- RADIAL WALL TENDON-STRESSING PROCEDURE FROM ONE END ONLY**
1. STRESS 1st, 5th, 9th, 13th, 17th & 20th ROWS OF TENDONS TO THE INITIAL JACKING FORCE.
  2. STRESS THE REMAINING TENDONS, WORKING FROM THE TOP DOWN, TO THE INITIAL JACKING FORCE.
  3. MARK EACH END OF THE TENDONS AND RECORD THE DIMENSION FROM THE MARK TO THE ANCHOR PLATE.
  4. STRESS 1st, 5th, 9th, 13th, 17th & 20th ROWS OF TENDONS TO THE INTERMEDIATE JACKING FORCE.
  5. STRESS THE REMAINING TENDONS, WORKING FROM THE TOP DOWN, TO THE INTERMEDIATE JACKING FORCE. ALTERNATE STRESSING FROM SIDE-TO-SIDE OF THE BUTTRESS SO THAT NO TENDON IS STRESSED MORE THAN TWO TENDONS AHEAD OF ANOTHER.
  6. STRESS THE 1st, 5th, 9th, 13th, 17th & 20th ROWS OF TENDONS TO THE FINAL JACKING FORCE.
  7. STRESS THE REMAINING TENDONS, WORKING FROM THE TOP DOWN, TO THE FINAL JACKING FORCE. ALTERNATE STRESSING IN THE SAME MANNER INDICATED ABOVE.
  8. MEASURE AND RECORD THE ELONGATIONS.
  9. IF ELONGATIONS ARE WITHIN THE LIMITS INDICATED IN THE "TENDON ELONGATION CHART," THE TAILS MAY BE CUT.
  10. IF ELONGATIONS ARE BELOW THE MINIMUM ELONGATION, STRESS THE OPPOSITE END OF THE TENDONS TO THE FINAL JACKING FORCE AND RECORD THE ELONGATIONS.
  11. IF THE TOTAL ELONGATIONS ARE WITHIN THE LIMITS, THE TAILS MAY BE CUT.
  12. IF ELONGATIONS DO NOT FALL WITHIN THE LIMITS AFTER STRESSING, DO NOT CUT THE TAILS AND CONTACT THE DUTCHLAND, INC. ENGINEER FOR RESOLUTION.



TENDON ELEVATION - WALL 3

WALL TENDON ELONGATION CHART					
JACKING FORCE PER TENDON = 45 KIPS					
WALL RUN	TENDON LENGTH	MINIMUM	TARGET	MAXIMUM	QTY PER RUN
2a	12' - 4"	3/4"	7/8"	1"	4
2b	17' - 8"	1 1/8"	1 1/4"	1 3/8"	5
3	71' - 8"	5 1/4"	5 3/4"	6 1/4"	12
4	17' - 8"	1 1/8"	1 1/4"	1 3/8"	9
A,C	80' - 0"	5 7/8"	6 3/8"	6 7/8"	20
D	21' - 8"	1 3/4"	1 3/4"	1 3/4"	9
RADIAL	108' - 0"	8"	8 5/8"	9 1/4"	20



DATE BY  
10/11/20 SDR

REVISIONS  
ISSUED FOR CONSTRUCTION

NO. 1

SEAL

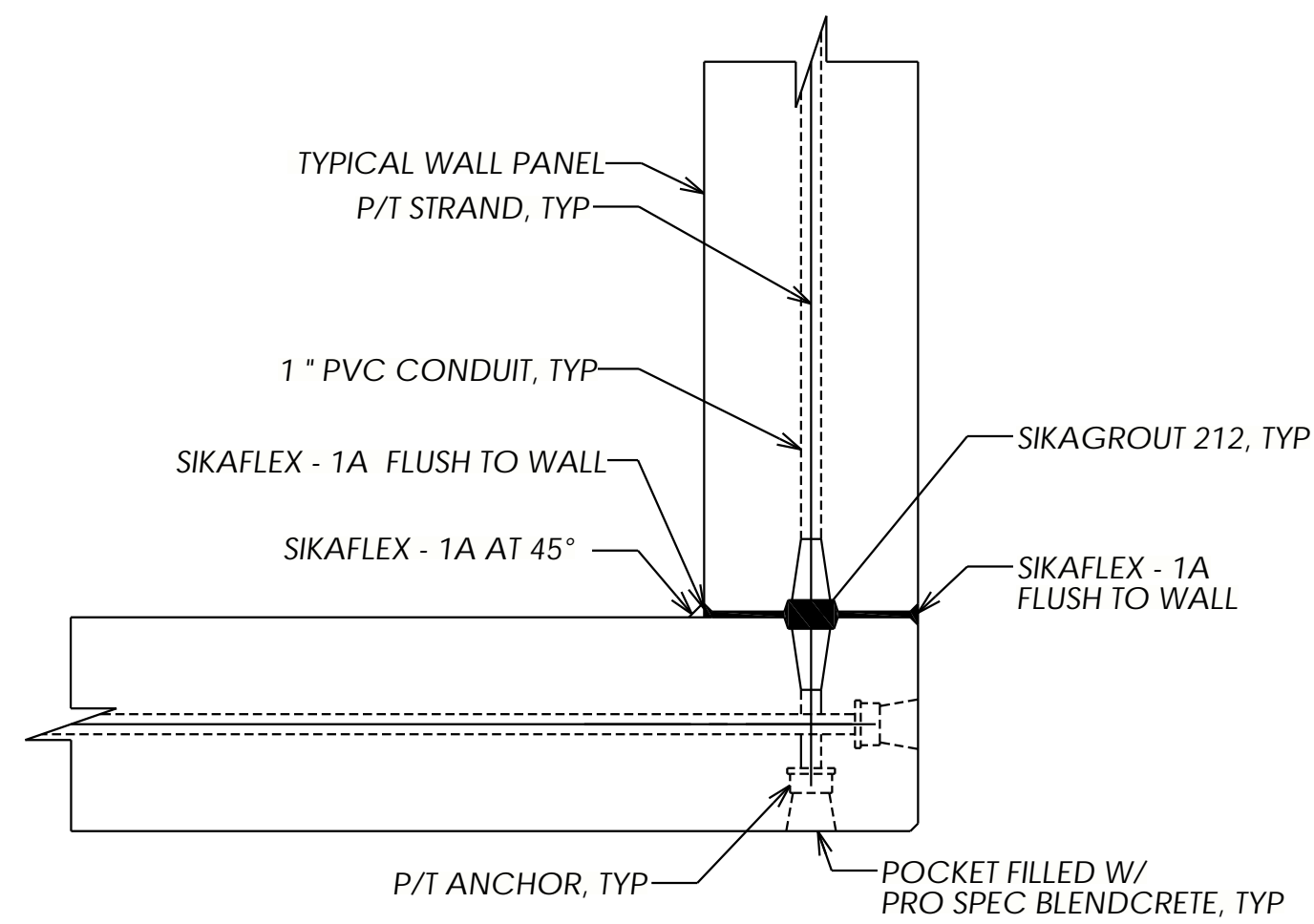
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**Dutchland**  
INCORPORATED  
Engineered Concrete Environmental Solutions

Project:  
TOWN OF MIDDLETOWN  
RAW WATER STORAGE  
IMPROVEMENTS  
RAW WATER STORAGE TANK  
FREDERICK COUNTY, MD

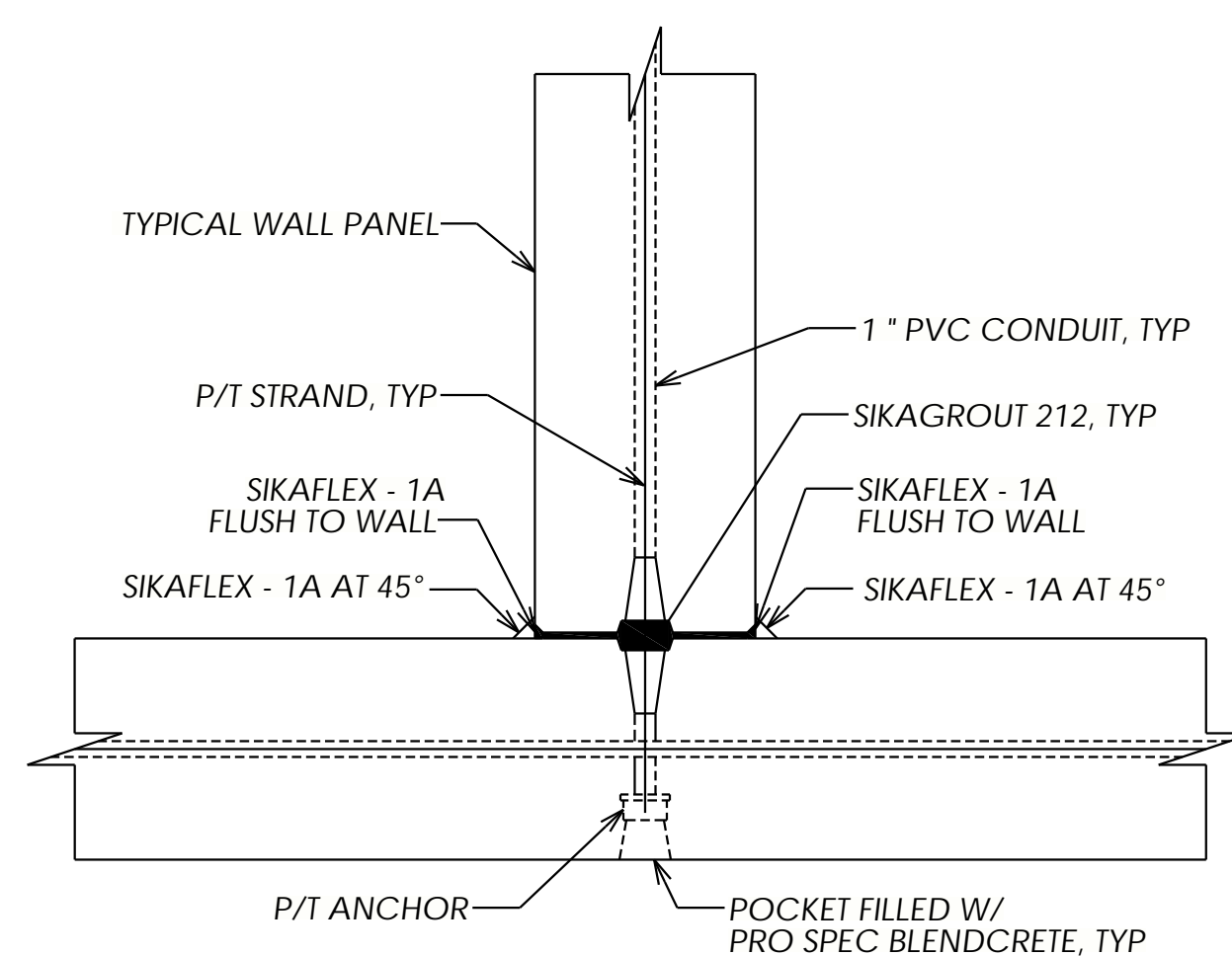
TENDON ELEVATIONS

Job Number: 18039-WT  
Project Manager: GK  
Drawn By: SDR  
Checked By: JEP  
Issue Date: 04/21/2020  
Sheet No. E304



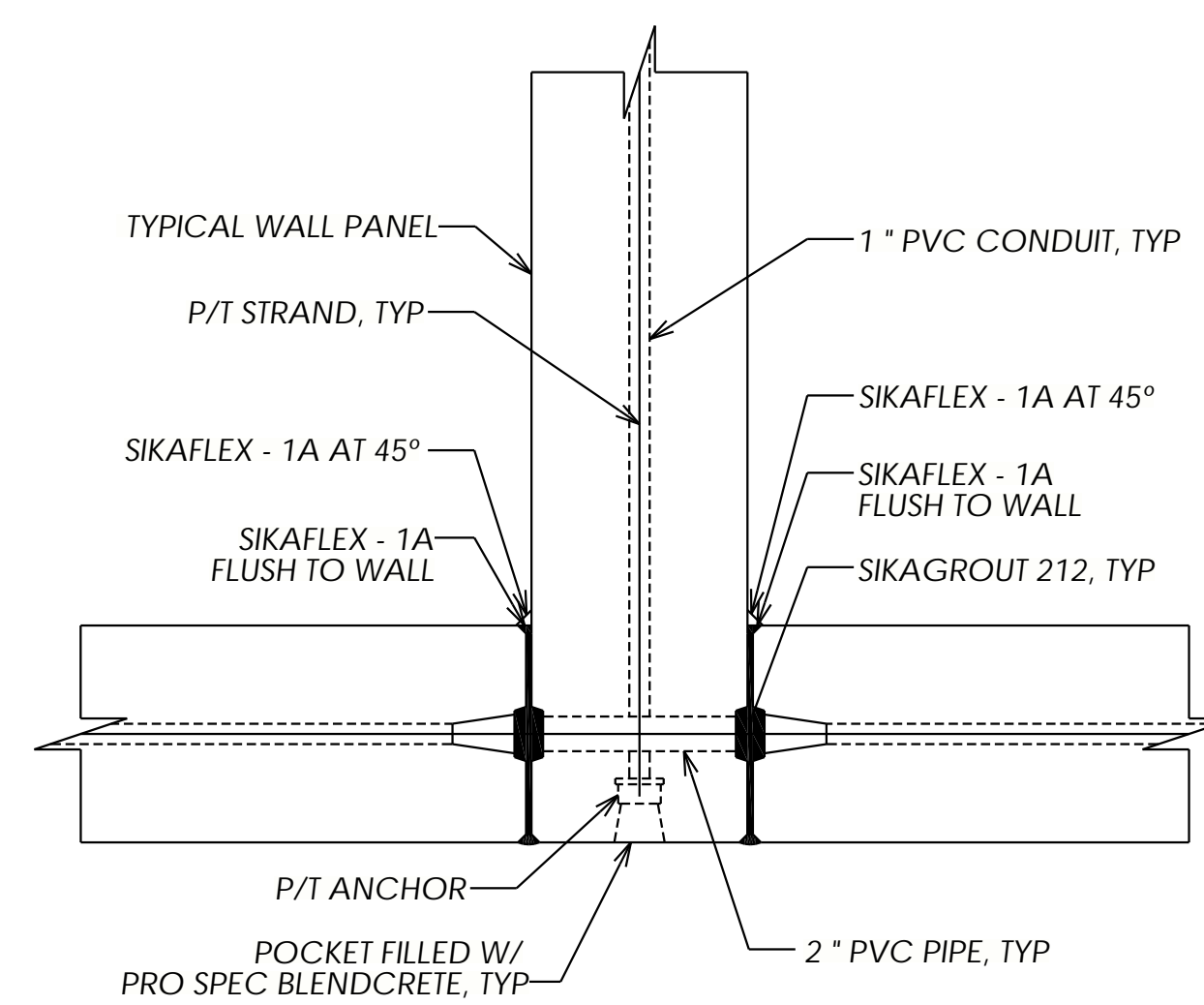
NOTE:  
1. USE SIKAFLEX 429-202 ADHESIVE PRIMER BEFORE APPLYING SIKAFLEX-1A ON INTERIOR SURFACES EXPOSED TO LIQUID.

**A**  
E201 NTS  
**WALL PANEL CORNER CONNECTION DETAIL**



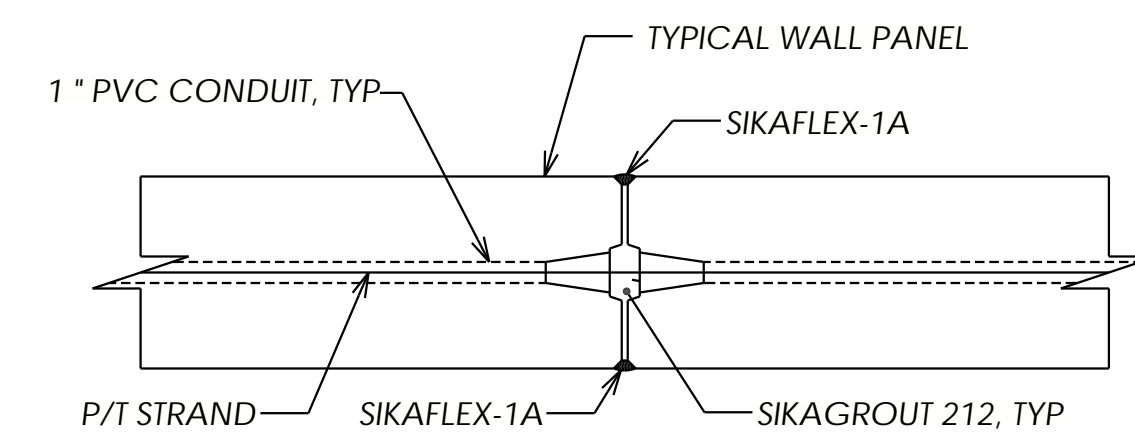
NOTE:  
1. USE SIKAFLEX 429-202 ADHESIVE PRIMER BEFORE APPLYING SIKAFLEX-1A ON INTERIOR SURFACES EXPOSED TO LIQUID.

**B**  
E201 NTS  
**WALL PANEL TEE CONNECTION DETAIL**



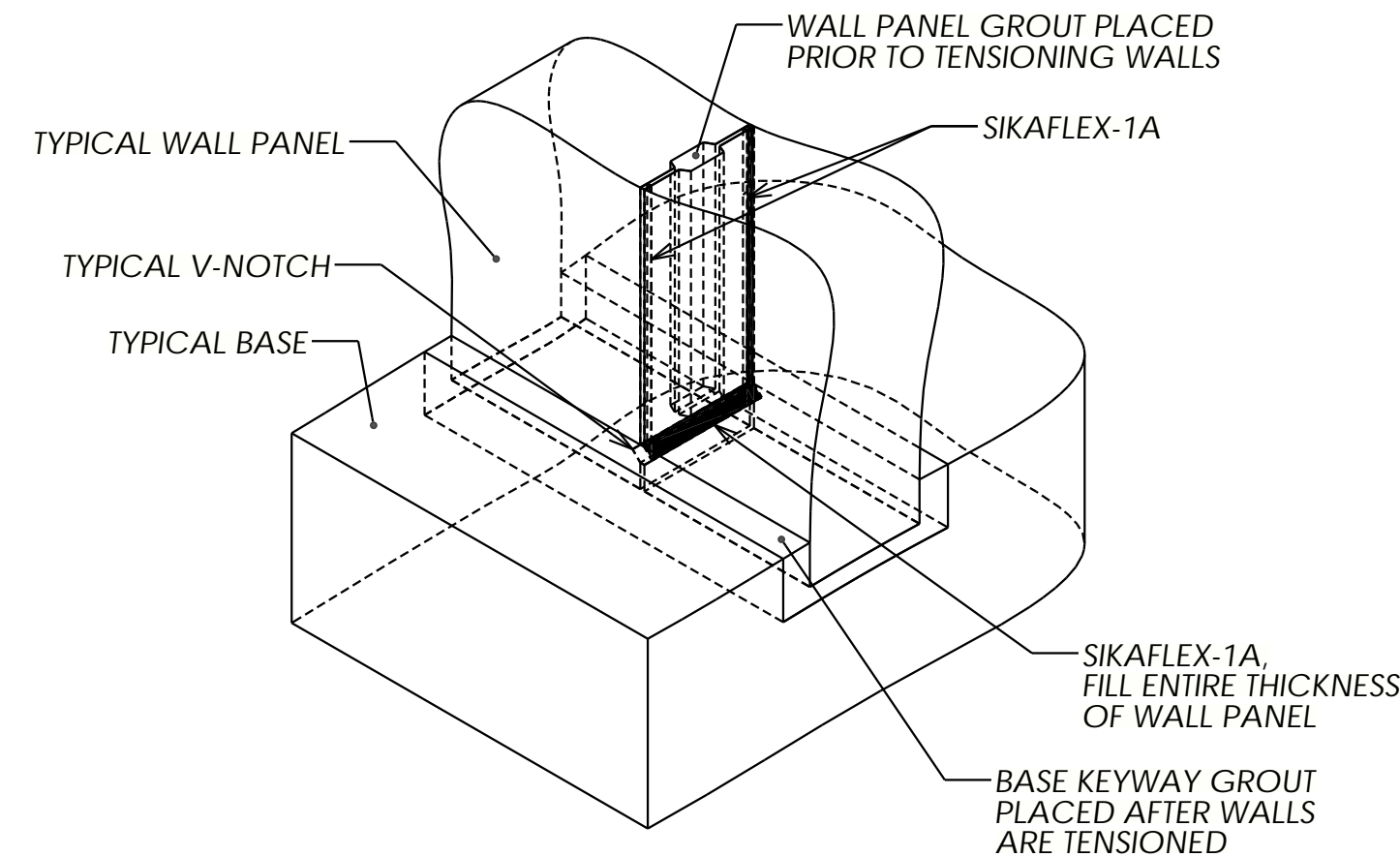
NOTE:  
1. USE SIKAFLEX 429-202 ADHESIVE PRIMER BEFORE APPLYING SIKAFLEX-1A ON INTERIOR SURFACES EXPOSED TO LIQUID.

**C**  
E201 NTS  
**WALL PANEL SANDWICH CONNECTION DETAIL**

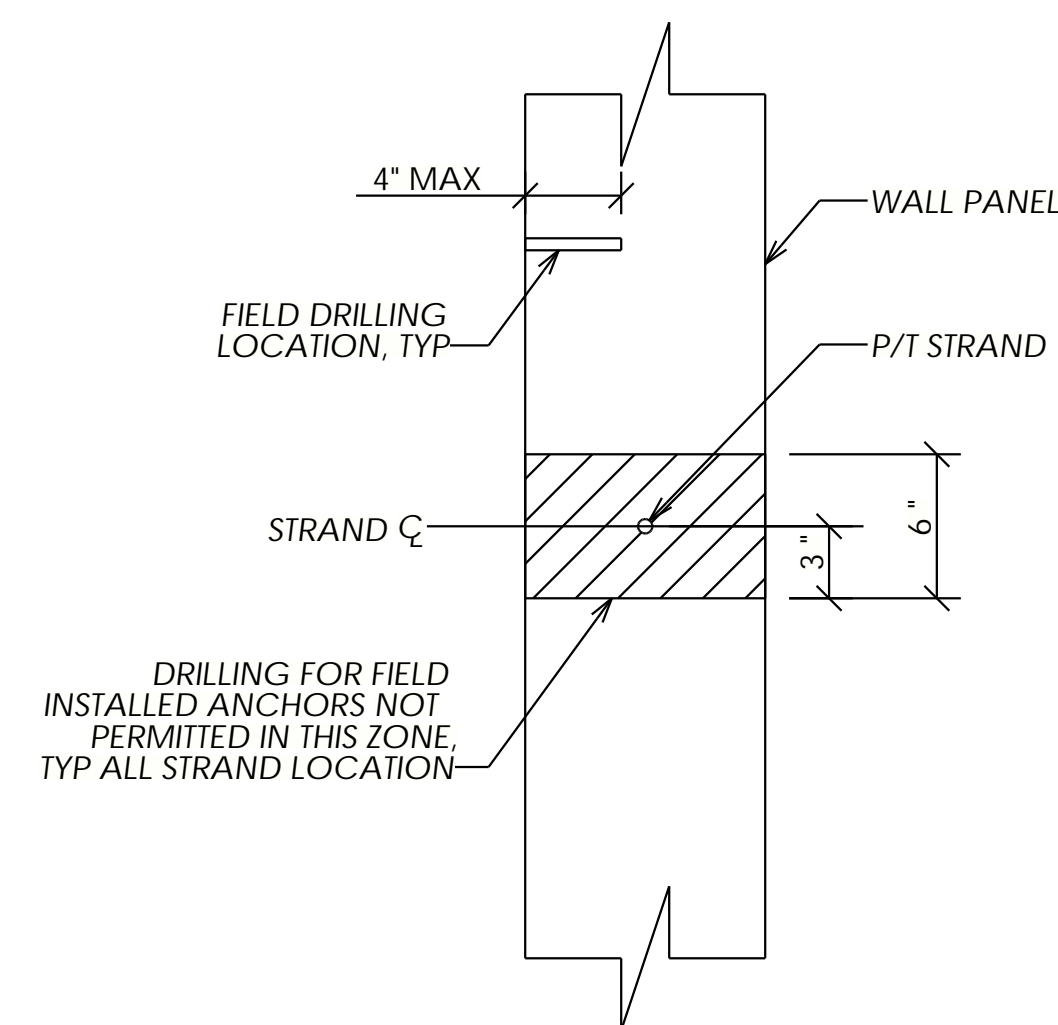


NOTE:  
1. USE SIKAFLEX 429-202 ADHESIVE PRIMER BEFORE APPLYING SIKAFLEX-1A ON INTERIOR SURFACES EXPOSED TO LIQUID.

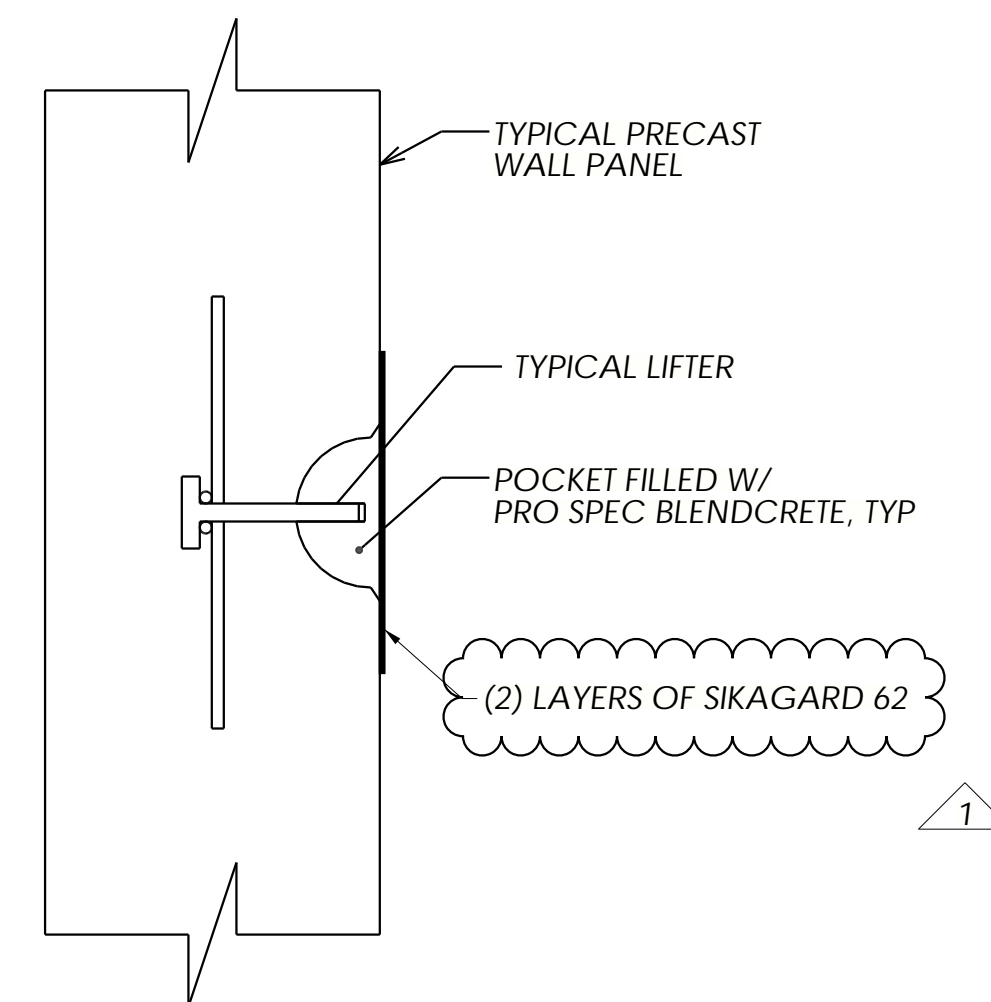
**D**  
E201 NTS  
**WALL PANEL JOINT DETAIL**



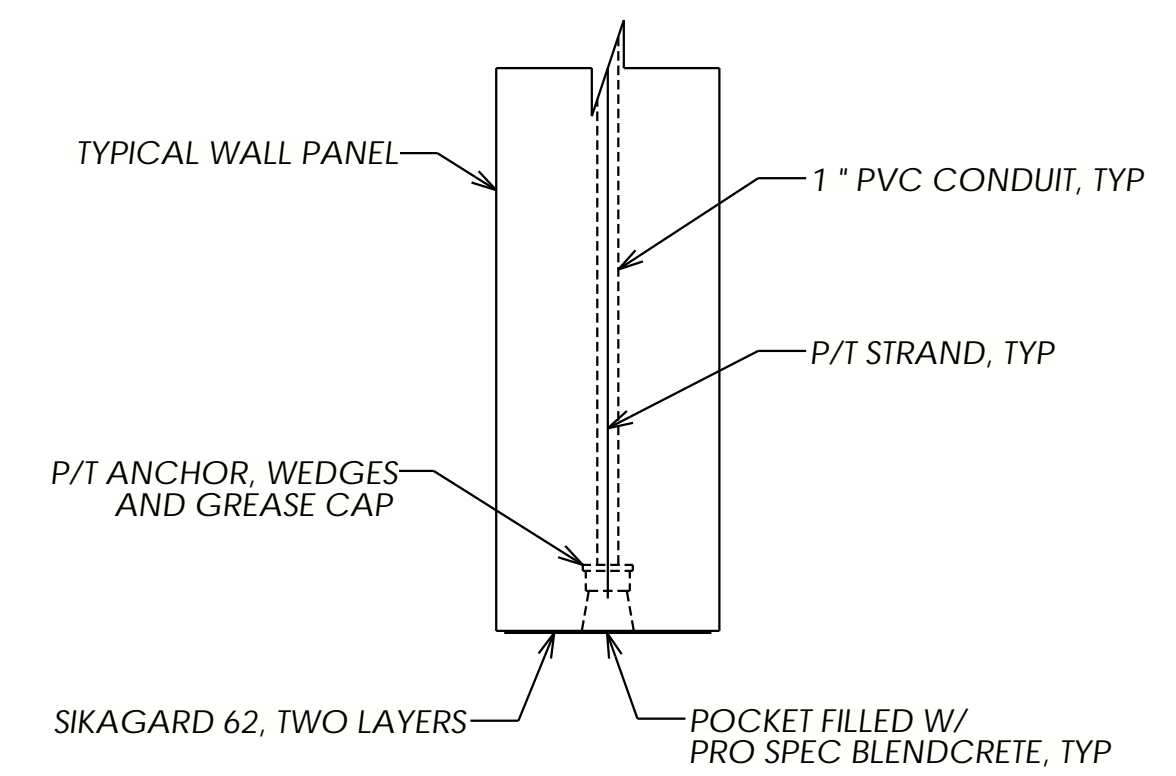
**E**  
- NTS  
**WALL PANEL GROUT ISOLATION DETAIL**



**F**  
- NTS  
**FIELD DRILLING ALLOWANCE IN WALL PANEL DETAIL**

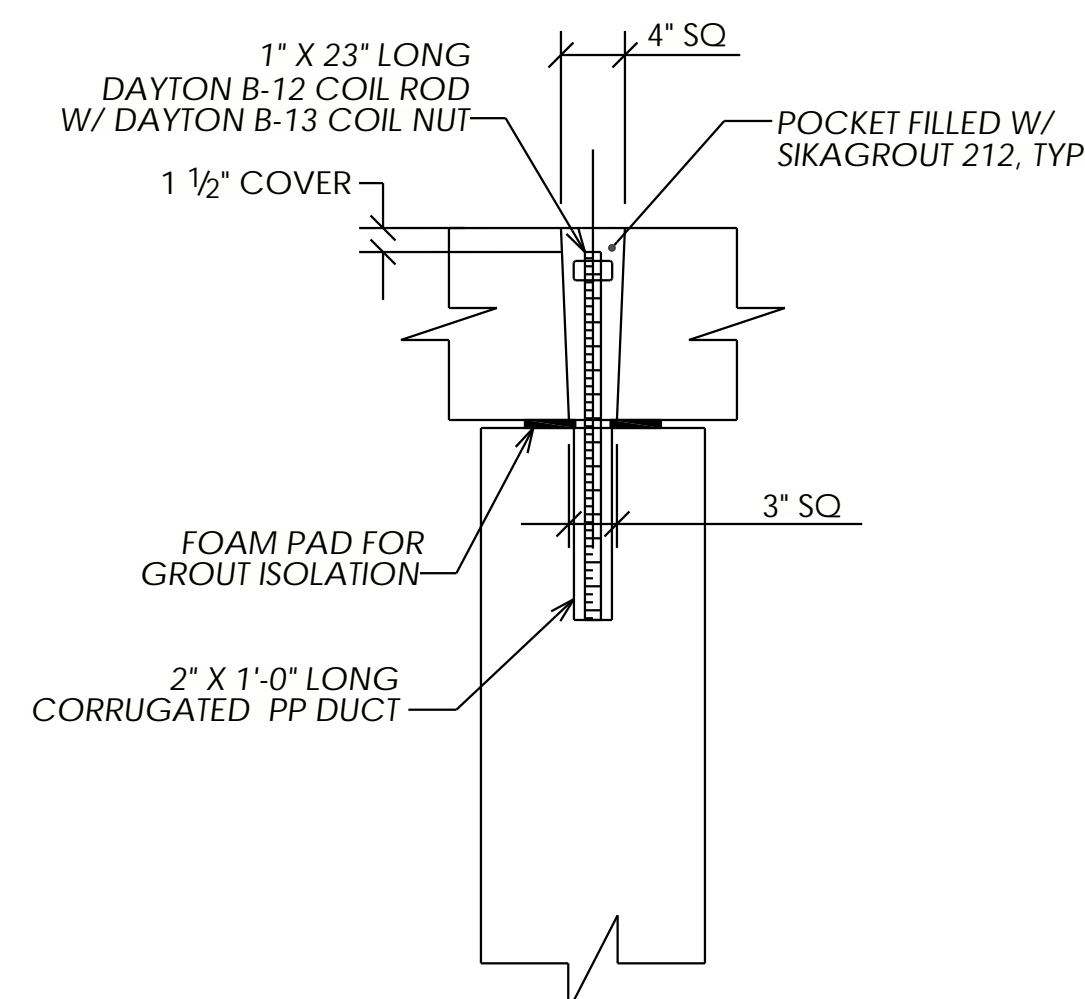


**G**  
- NTS  
**TYPICAL WALL PANEL LIFTING ANCHOR POCKET DETAIL**

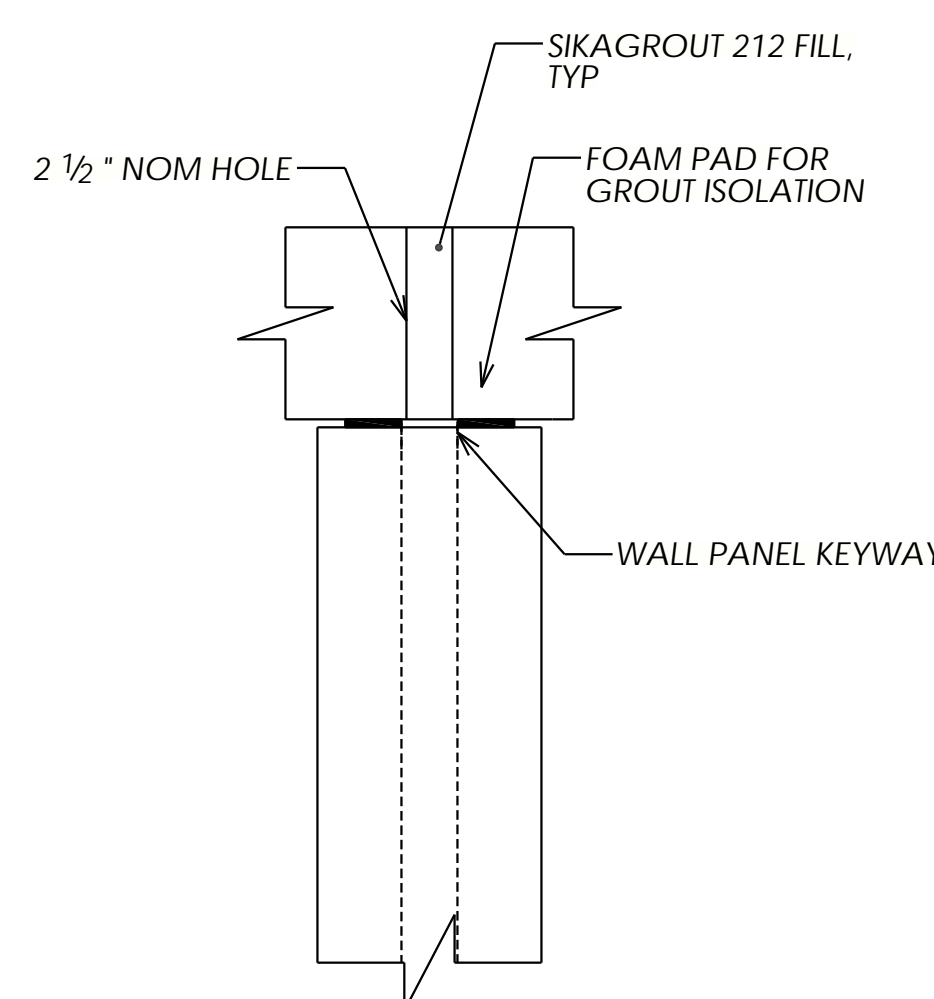


NOTE:  
1. REFER TO PRODUCT MANUFACTURER'S WRITTEN INSTRUCTIONS FOR FINAL TENDON TRIMMING, WEDGE INSTALLATION & GREASE CAP PLACEMENT PRIOR TO POCKET FINISHING.

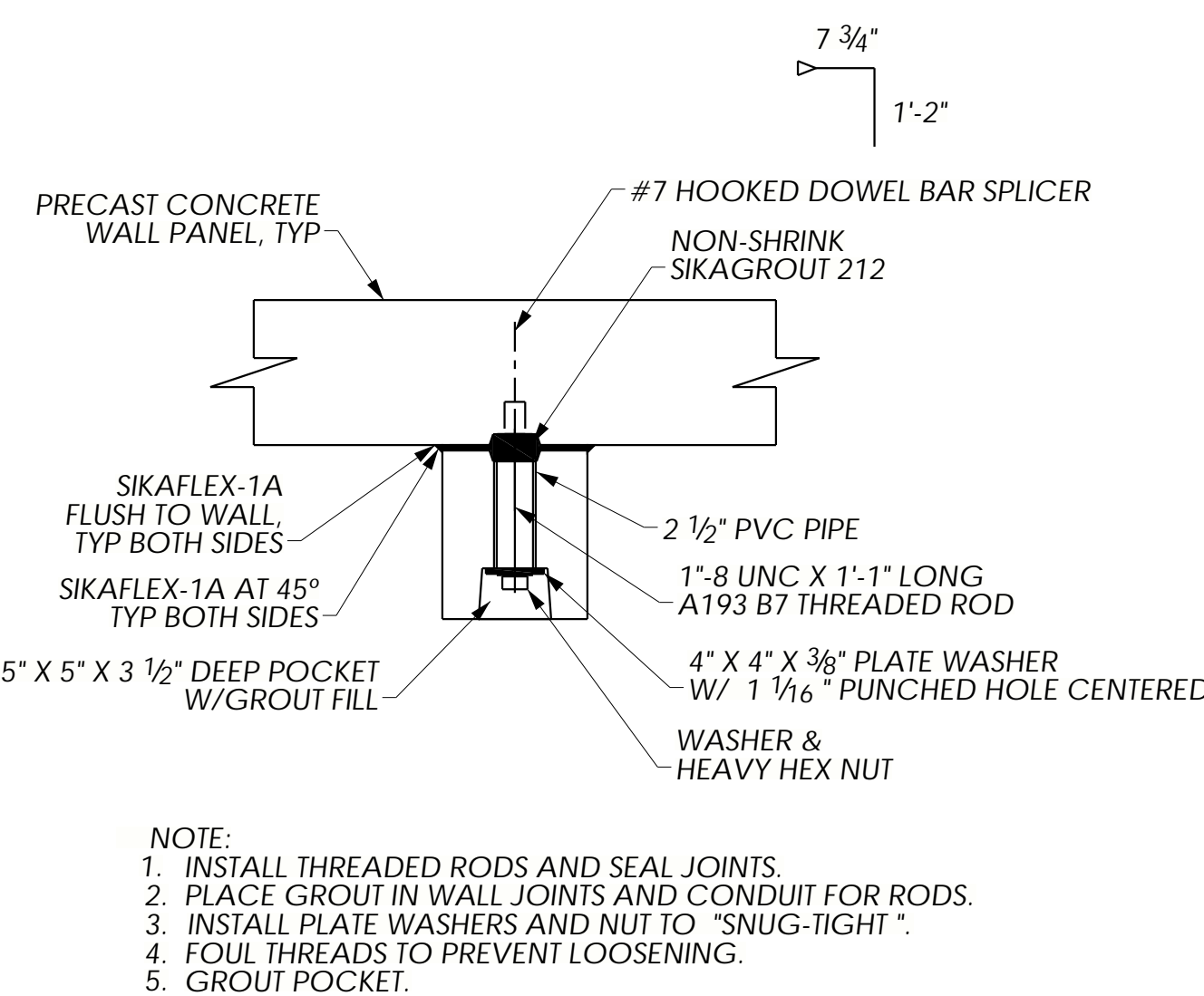
**H**  
E304 NTS  
**INTERIOR END WALL PANEL CONNECTION DETAIL**



**J**  
E204 NTS  
**WALL TO ROOF CONNECTION**

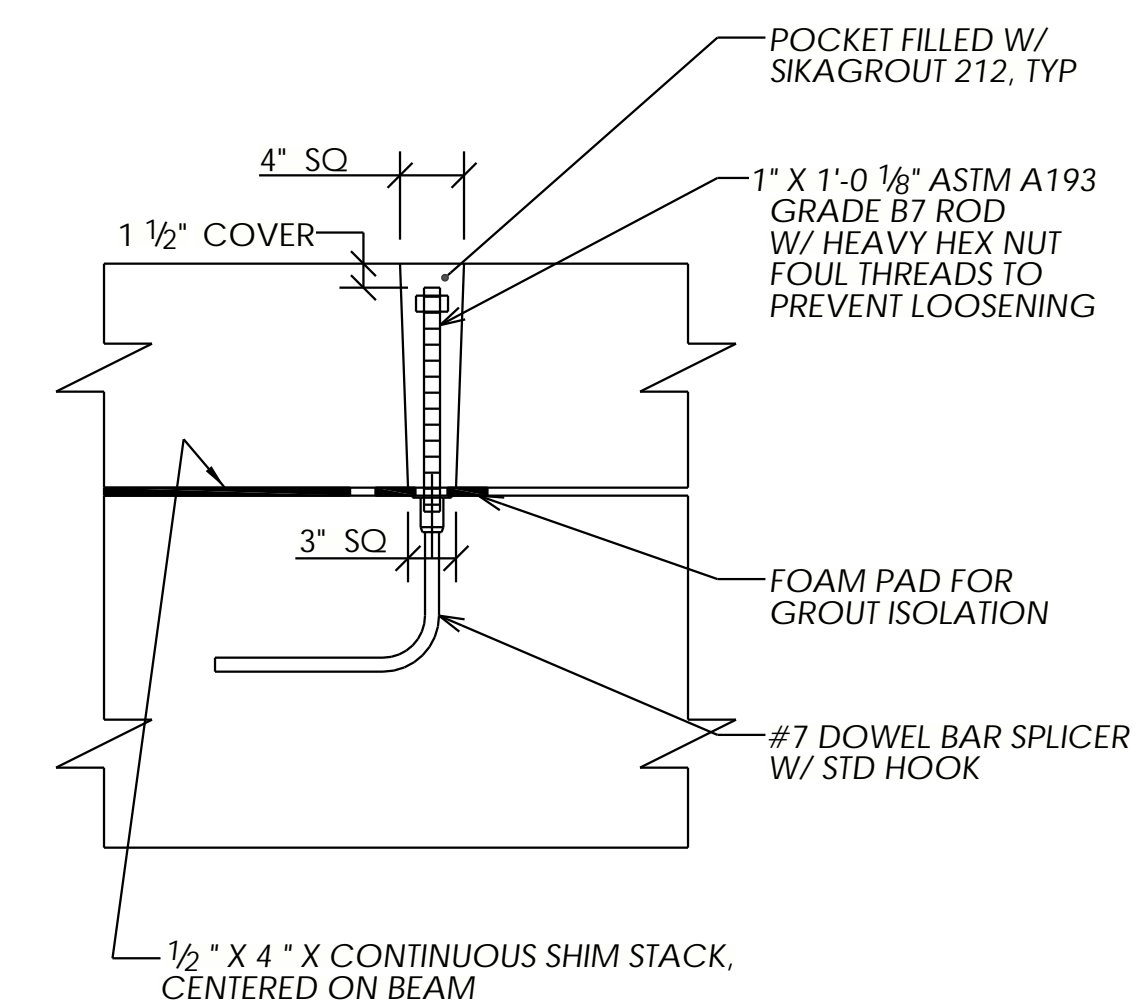


**K**  
E204 NTS  
**GROUT PORT AT WALL JOINT**



NOTE:  
1. INSTALL THREADED RODS AND SEAL JOINTS.  
2. PLACE GROUT IN WALL JOINTS AND CONDUIT FOR RODS.  
3. INSTALL PLATE WASHERS AND NUT TO "SNUG-TIGHT".  
4. FOUL THREADS TO PREVENT LOOSENING.  
5. GROUT POCKET.

**L**  
E304 NTS  
**TIE-BACK CONNECTION DETAIL**



**M**  
E304 NTS  
**BEAM TO ROOF CONNECTION**

NO	REVISIONS	DATE	BY
1	REVISE & RESUBMIT	05/08/20	SDR

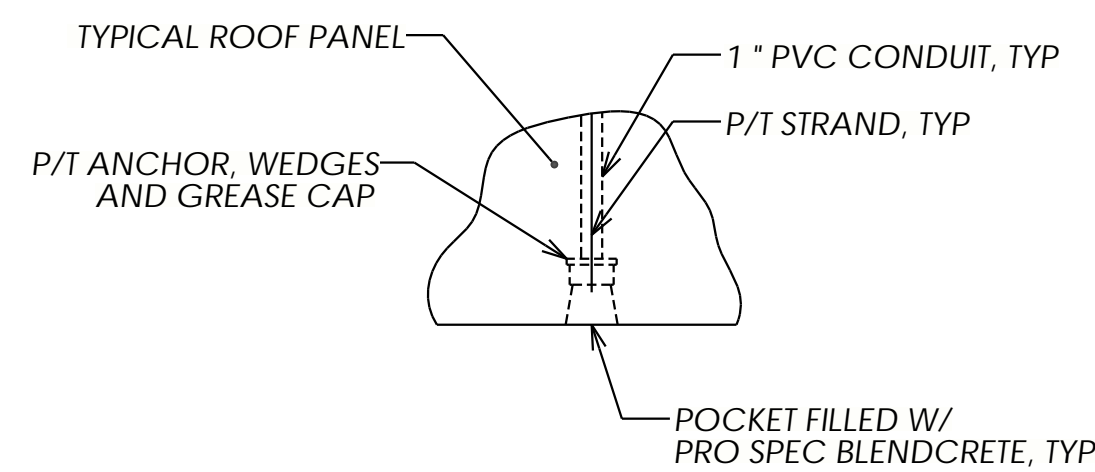
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Project:  
**TOWN OF MIDDLETOWN RAW WATER STORAGE IMPROVEMENTS**  
RAW WATER STORAGE TANK  
FREDERICK COUNTY, MD

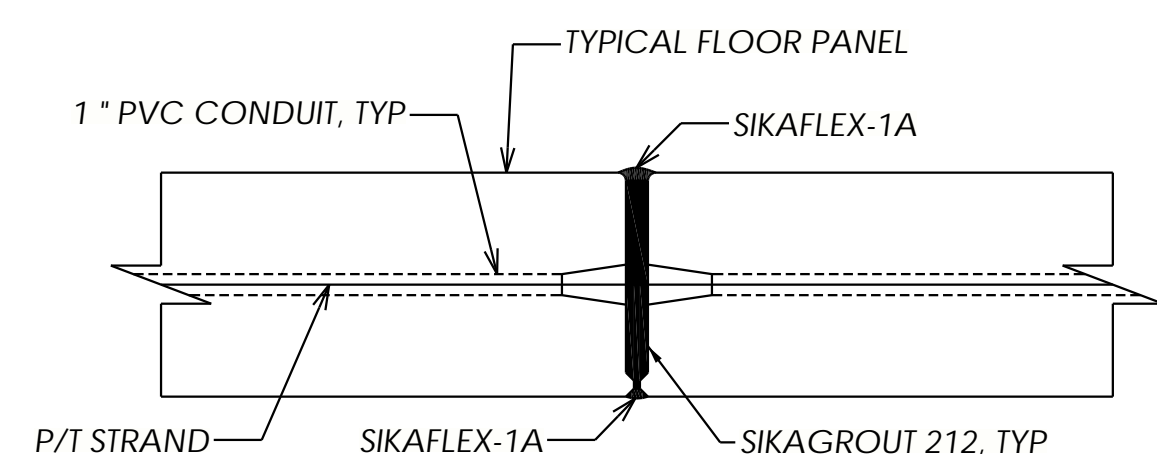
DETAILS

Job Number: 18039-WT  
Project Manager: GK  
Drawn By: SDR  
Checked By: JEP  
Issue Date: 04/21/2020  
Sheet No. E401



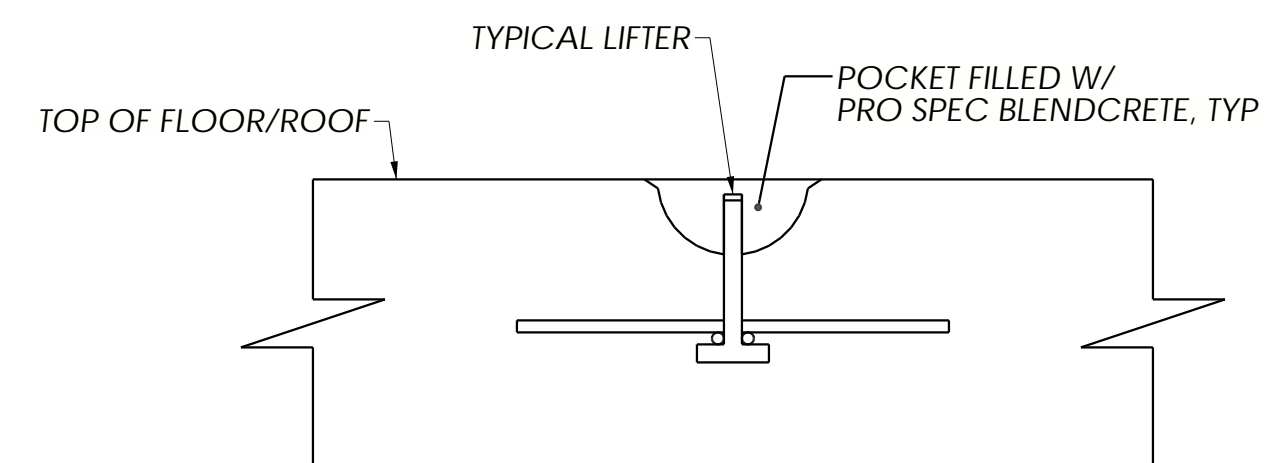
NOTE:  
1. REFER TO PRODUCT MANUFACTURER'S WRITTEN INSTRUCTIONS FOR FINAL TENDON TRIMMING, WEDGE INSTALLATION & GREASE CAP PLACEMENT PRIOR TO POCKET FINISHING.

**A** ROOF PANEL CONNECTION DETAIL  
E205 NTS

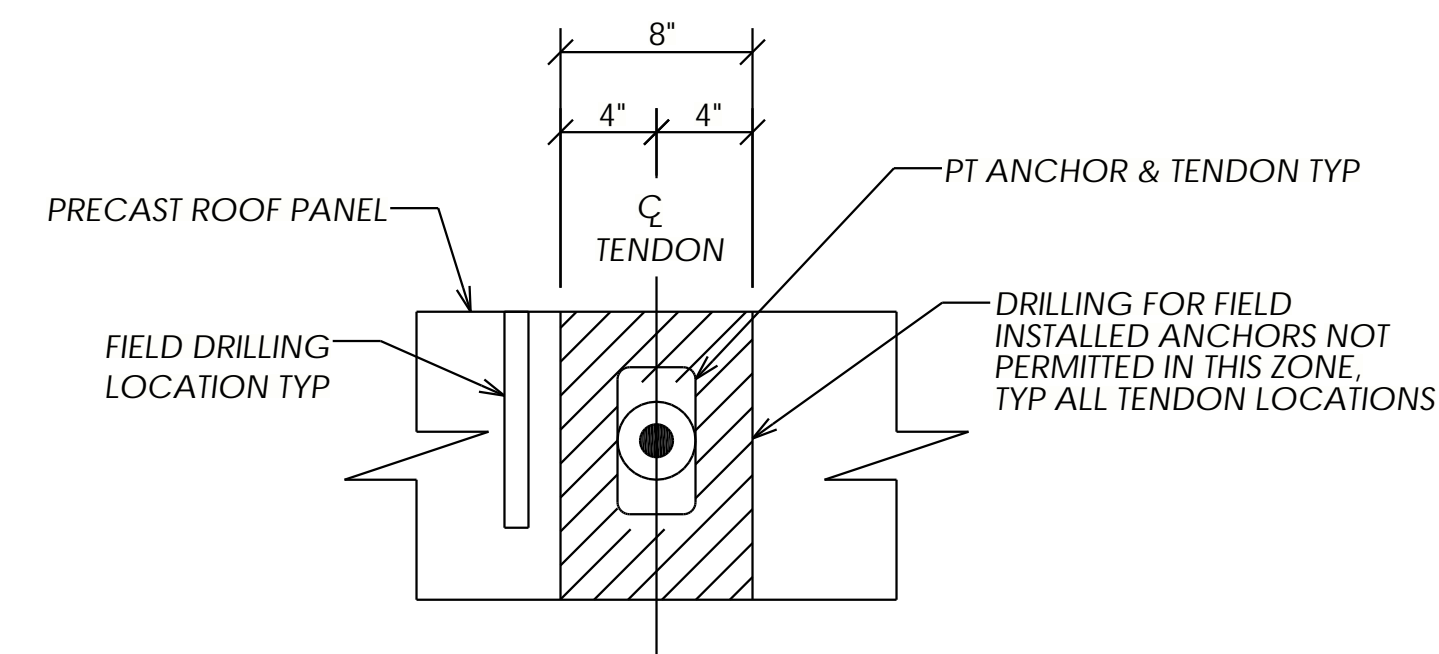


NOTE:  
1. USE SIKAFLEX 429-202 ADHESIVE PRIMER BEFORE APPLYING SIKAFLEX-1A ON INTERIOR SURFACES EXPOSED TO LIQUID.

**B** FLOOR/ROOF PANEL JOINT DETAIL  
E204 NTS

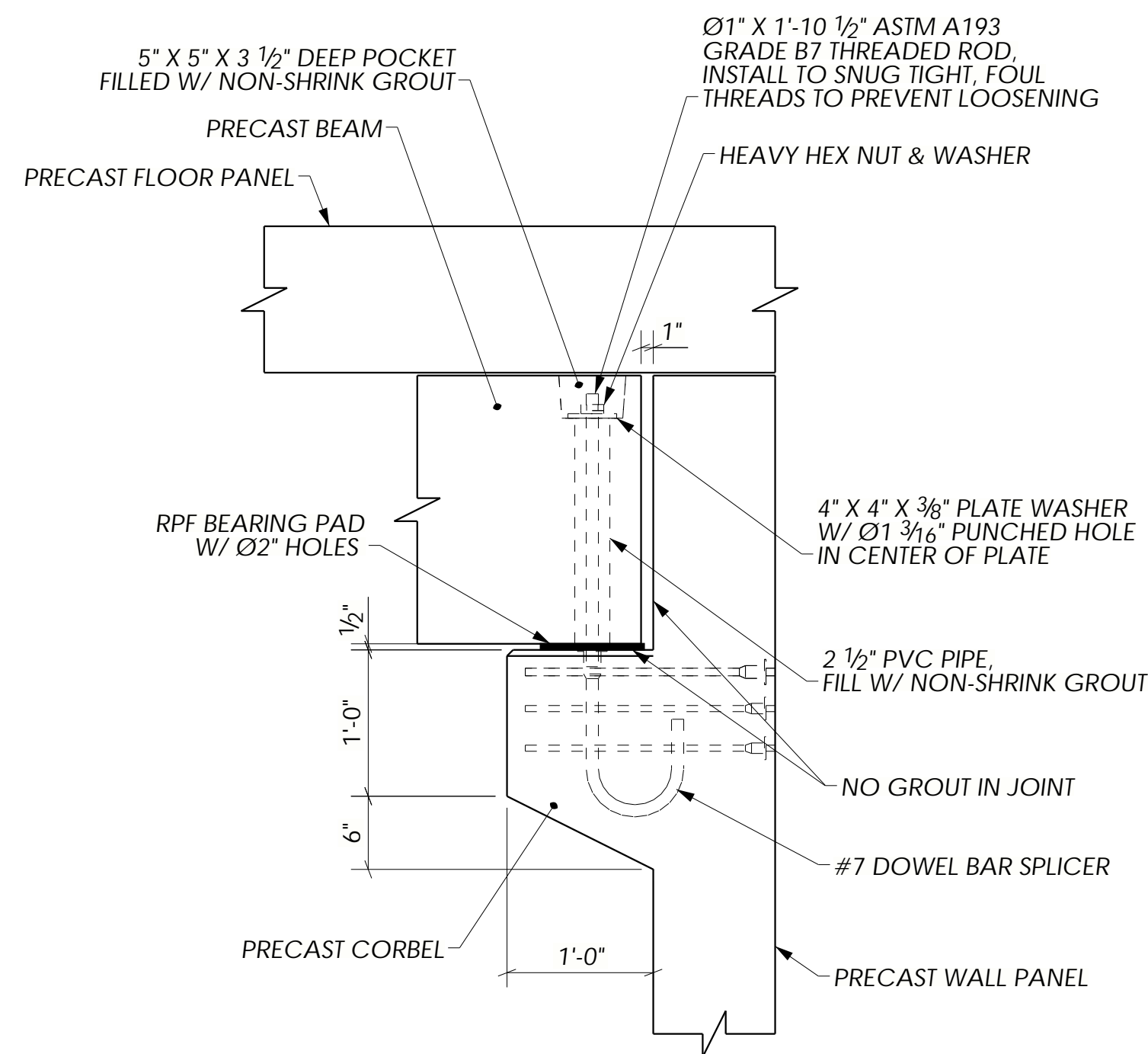


**C** FLOOR/ROOF PANEL LIFTING ANCHOR POCKET DETAIL  
NTS

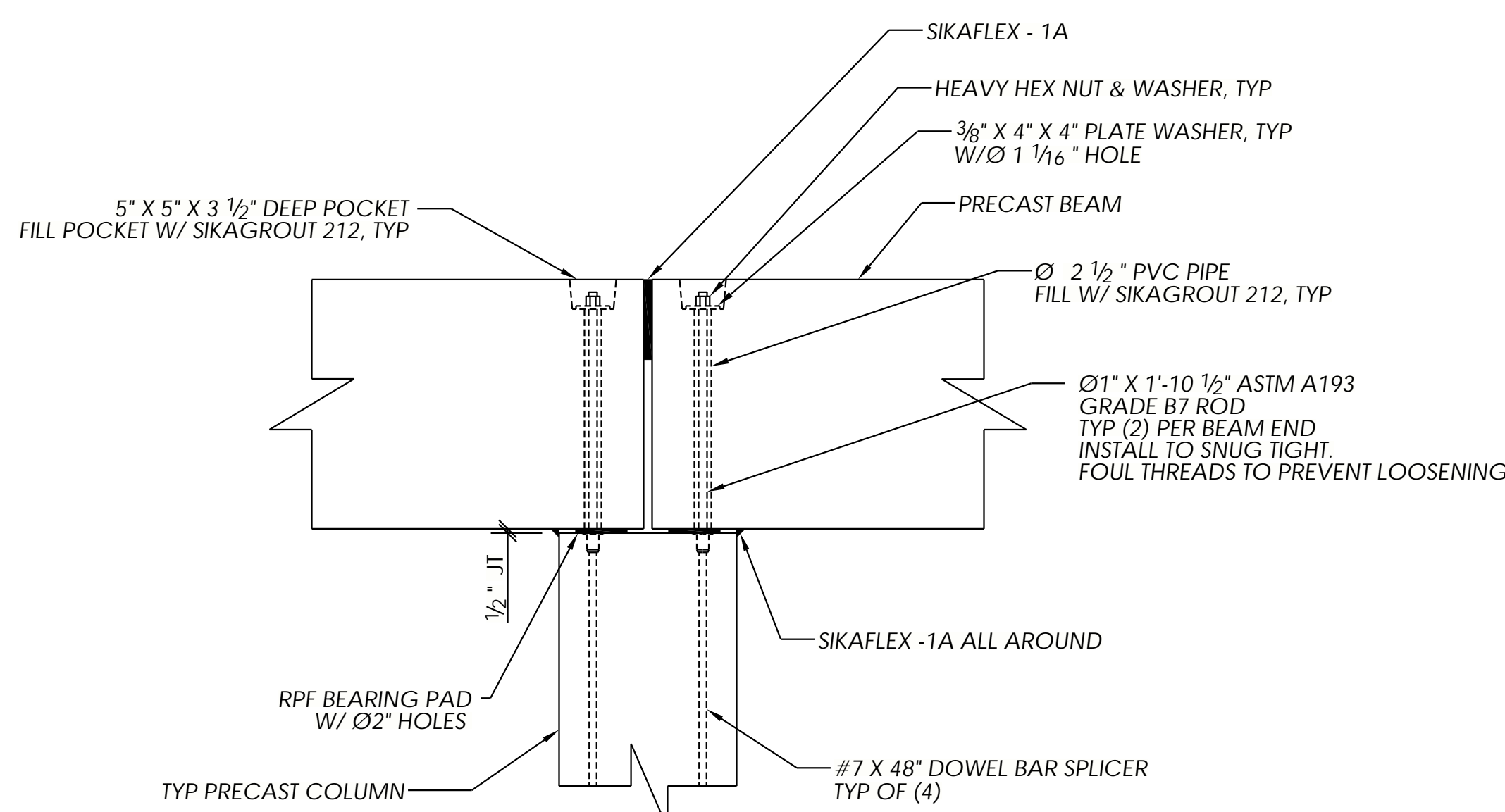


NOTE:  
1. ANY OTHER DRILLING IN ROOF MUST BE APPROVED BY DUTCHLAND, INC.  
2. DO NOT DRILL WHERE STRAND ANCHORS ARE LOCATED (ON EXTERIOR PERIMETER OF ROOF)

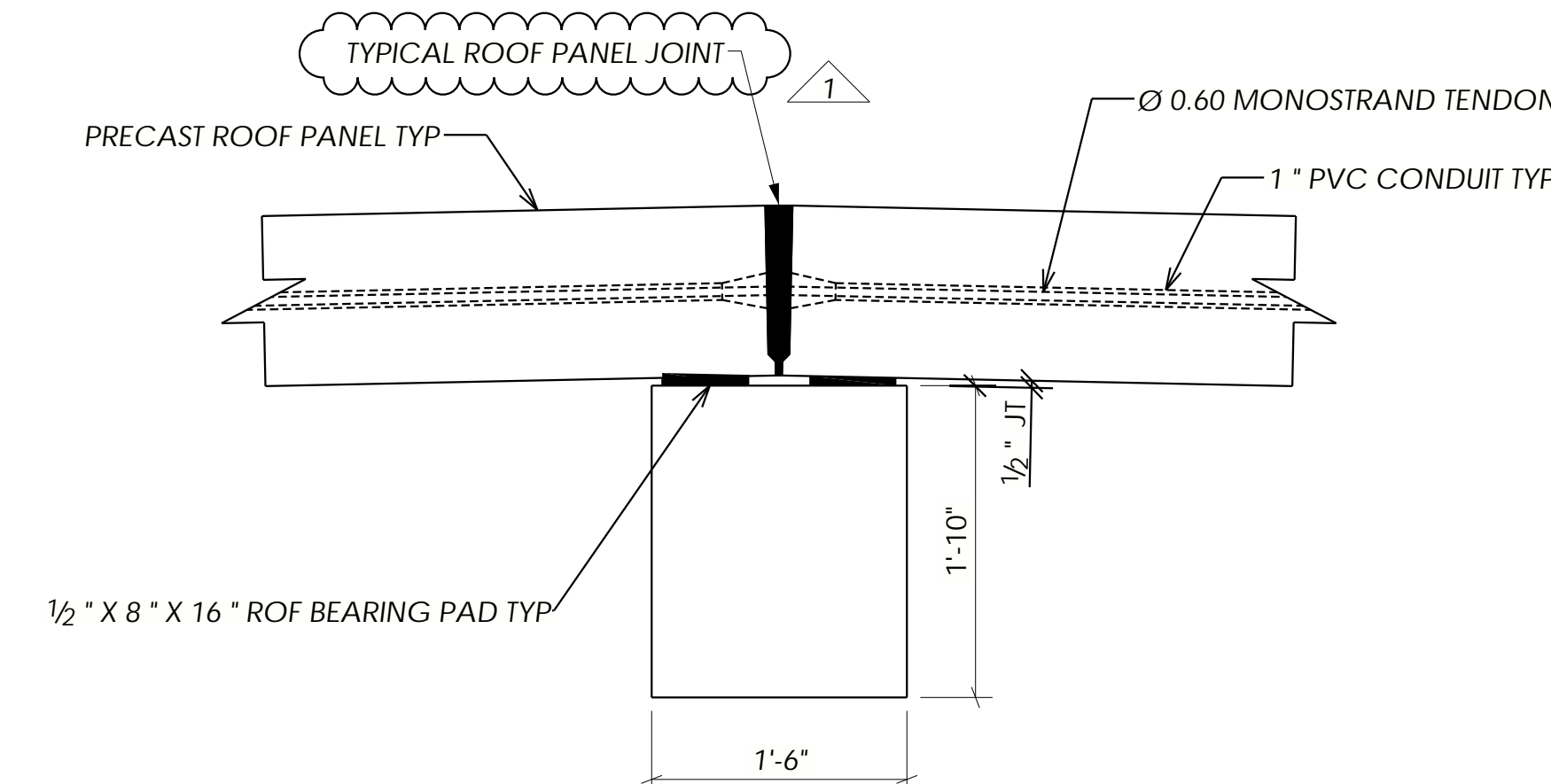
**D** FIELD DRILLING ALLOWANCE IN FLOOR/ROOF PANEL DETAIL  
NTS



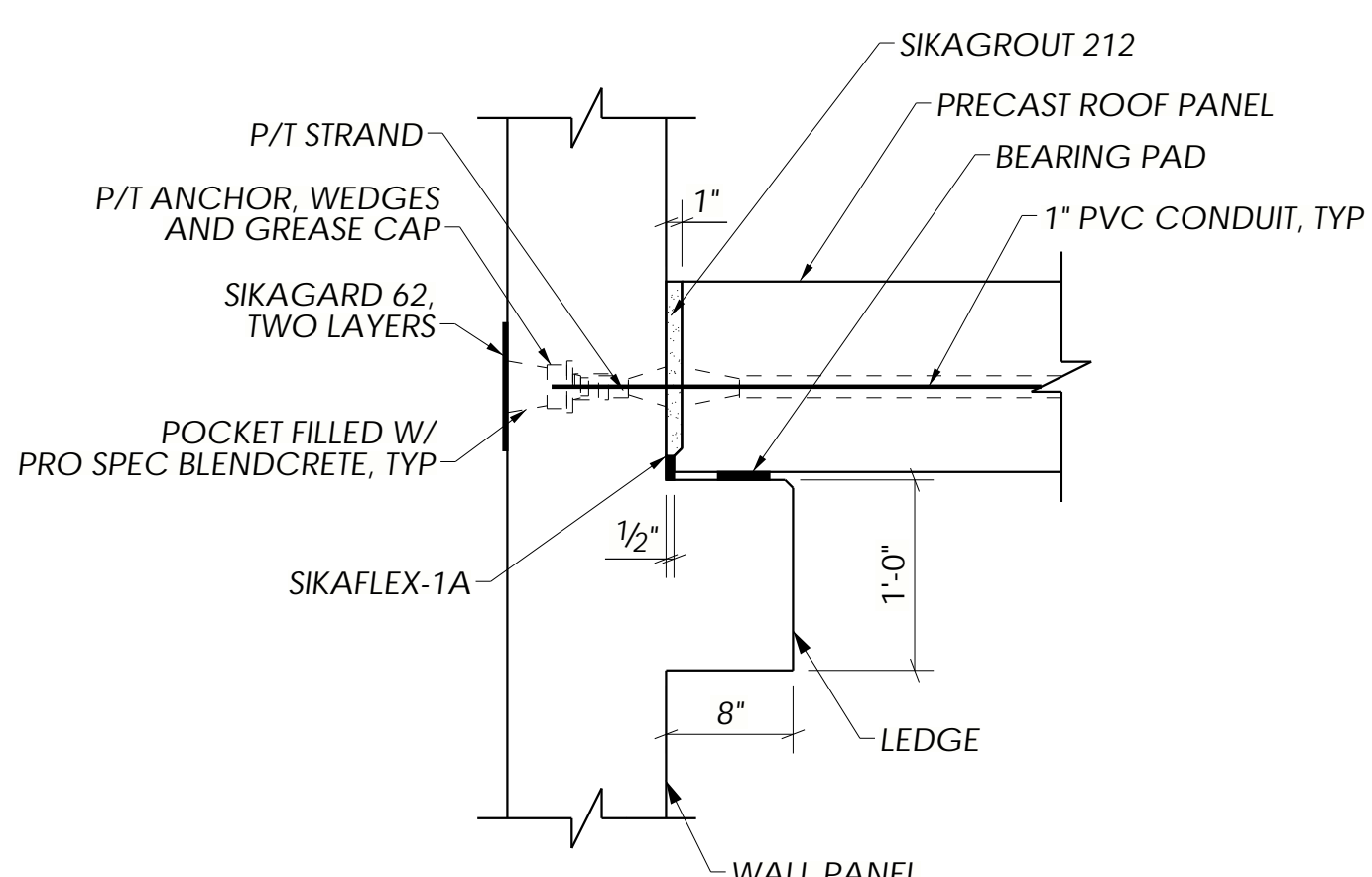
**E** BEAM TO CORBEL CONNECTION  
E303 NTS



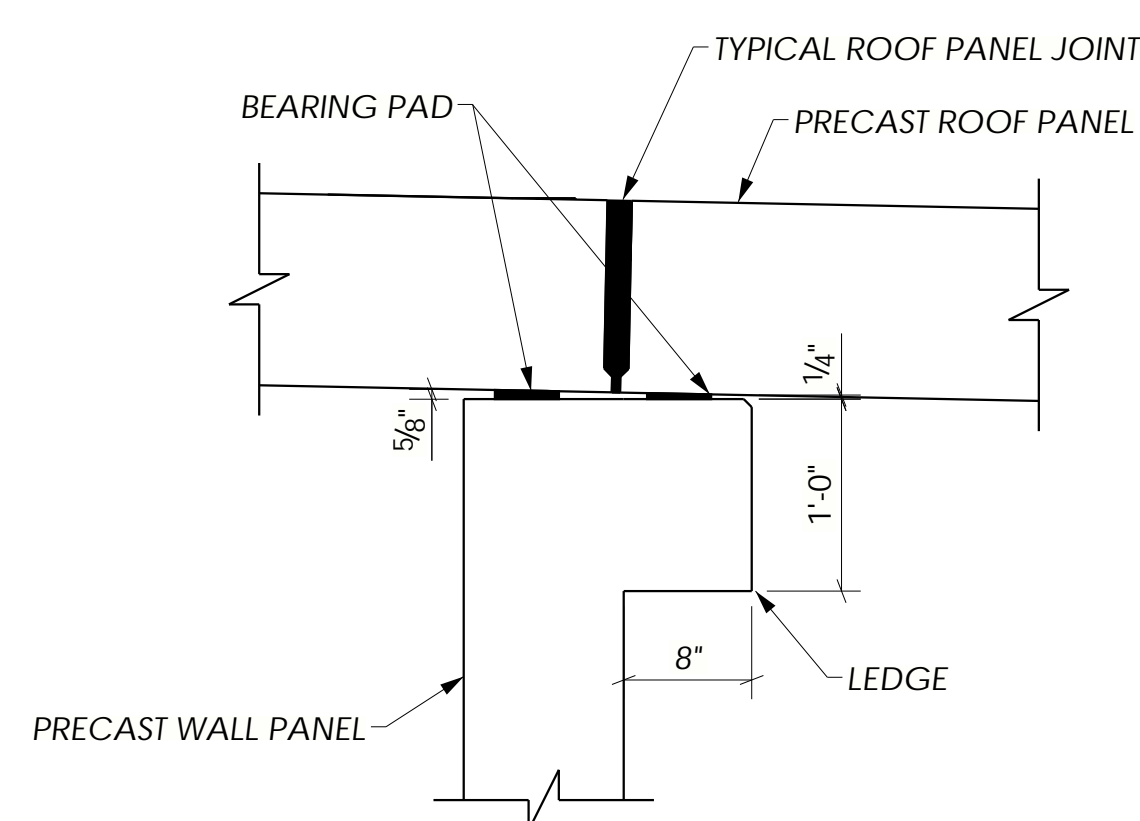
**F** COLUMN TO BEAM CONNECTION DETAIL  
E303 NTS



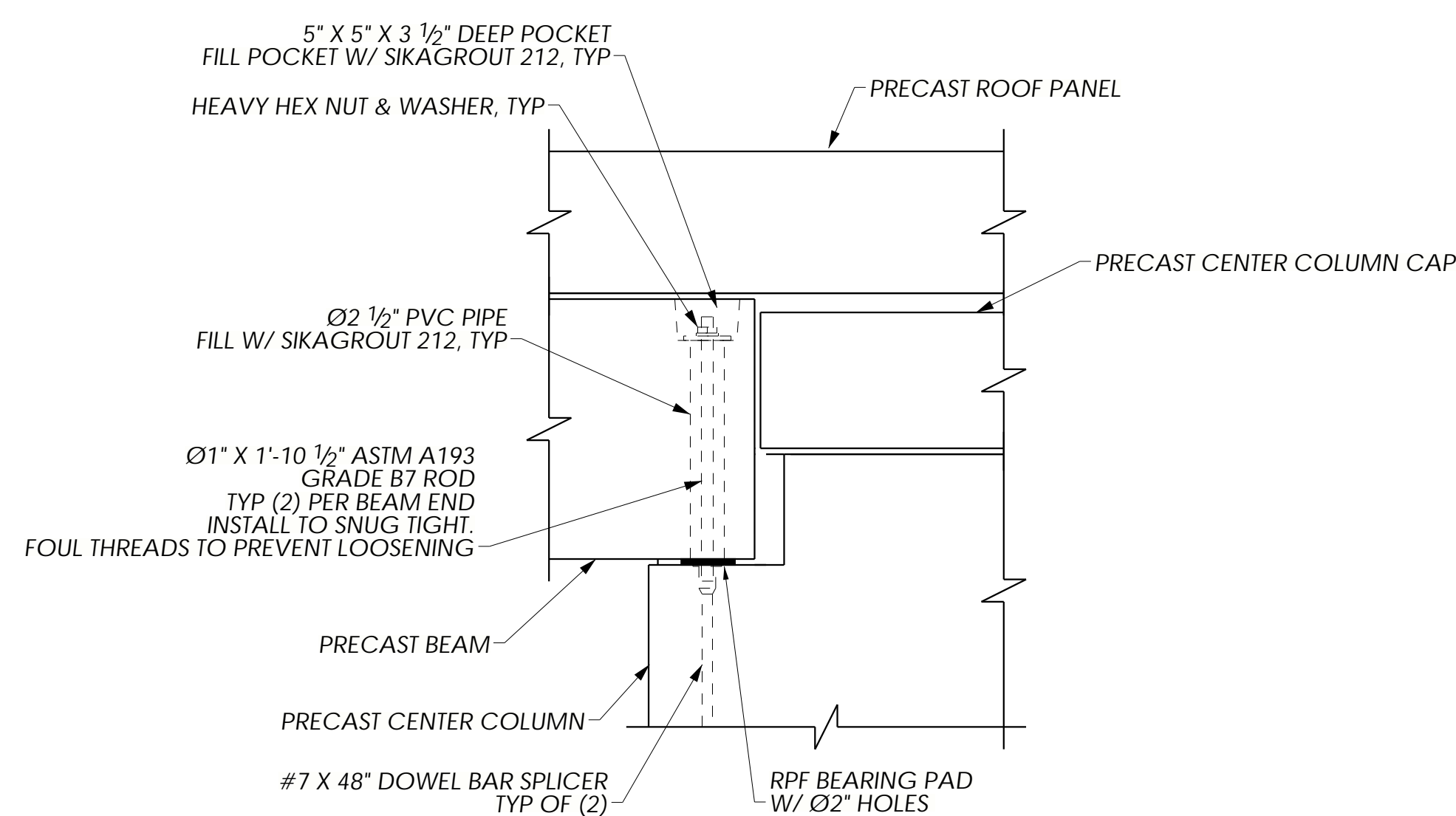
**G** BEAM TO ROOF DETAIL  
NTS



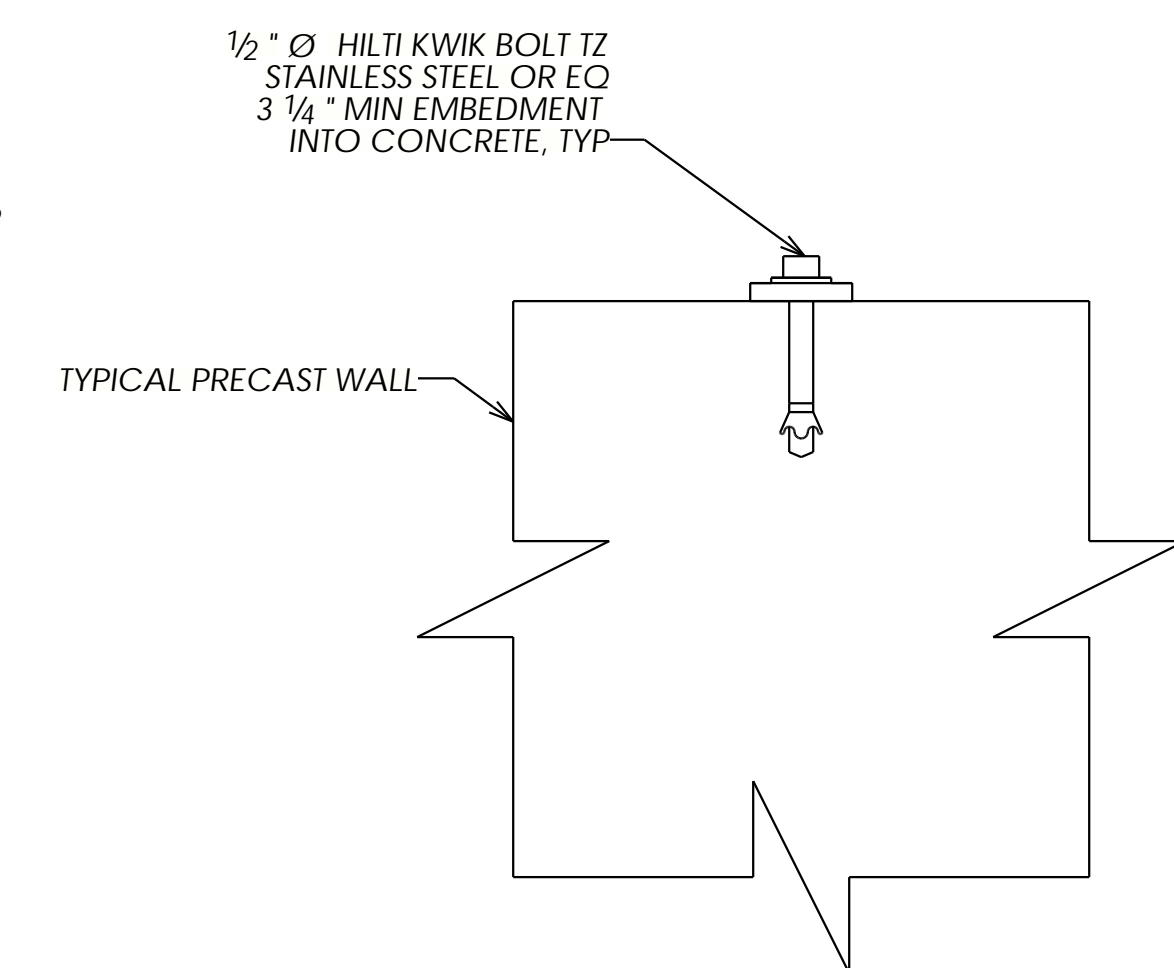
**H** LEDGE TO FLOOR DETAIL  
E303 NTS



**J** LEDGE TO ROOF DETAIL  
E303 NTS

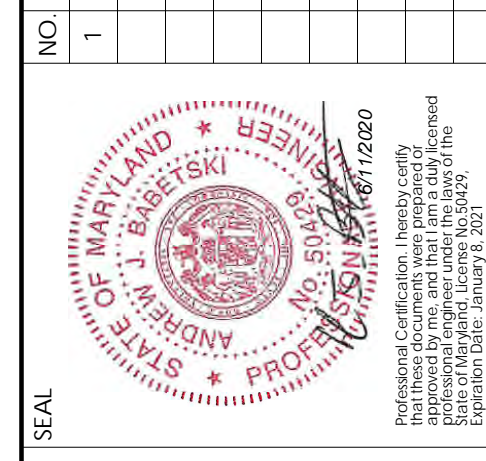


**K** CENTER COLUMN TO BEAM CONNECTION  
E303 NTS



**L** HATCH/VENT ATTACHMENT DETAIL  
NTS

NO	REVISIONS	DATE	BY
1	ISSUED FOR CONSTRUCTION	06/17/20	SDR



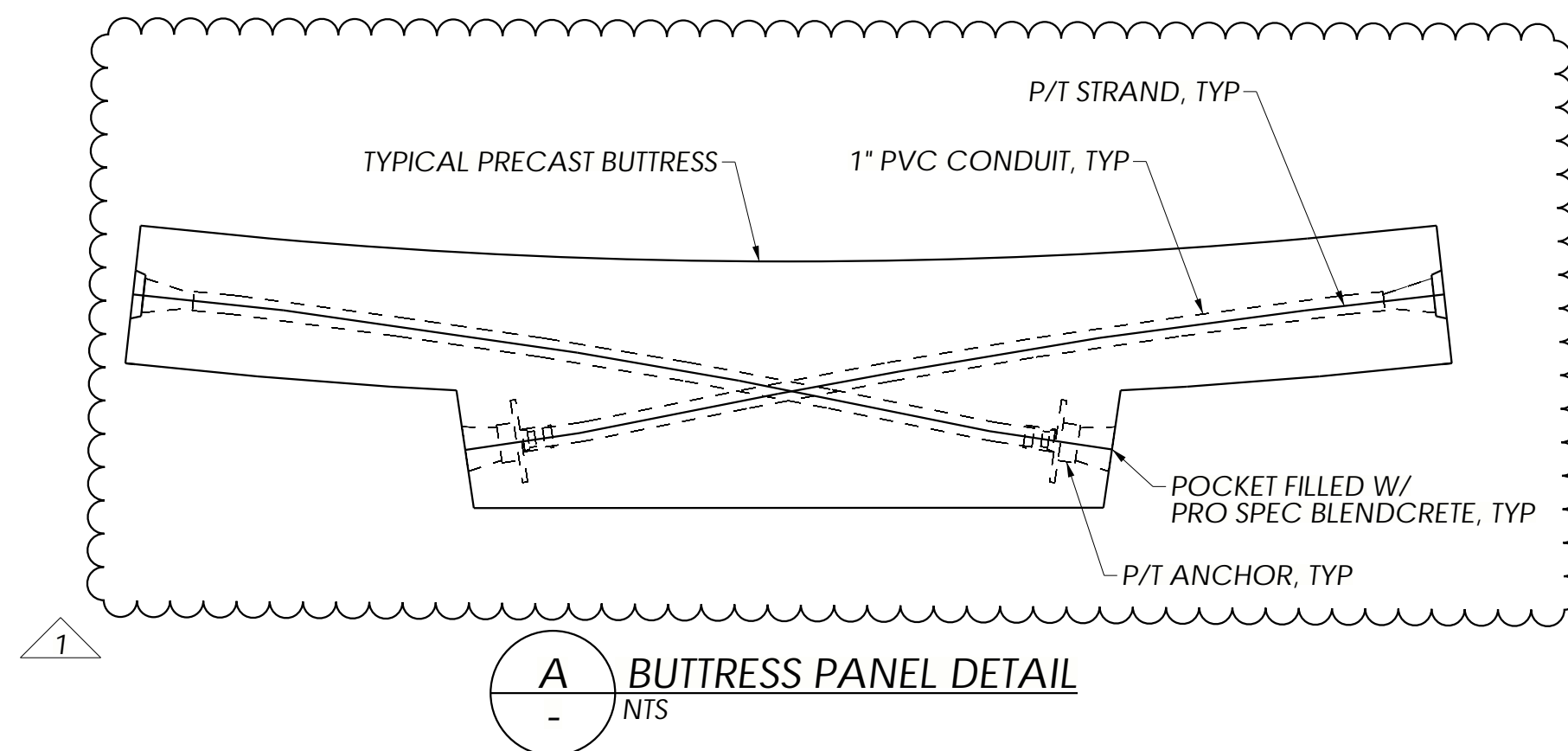
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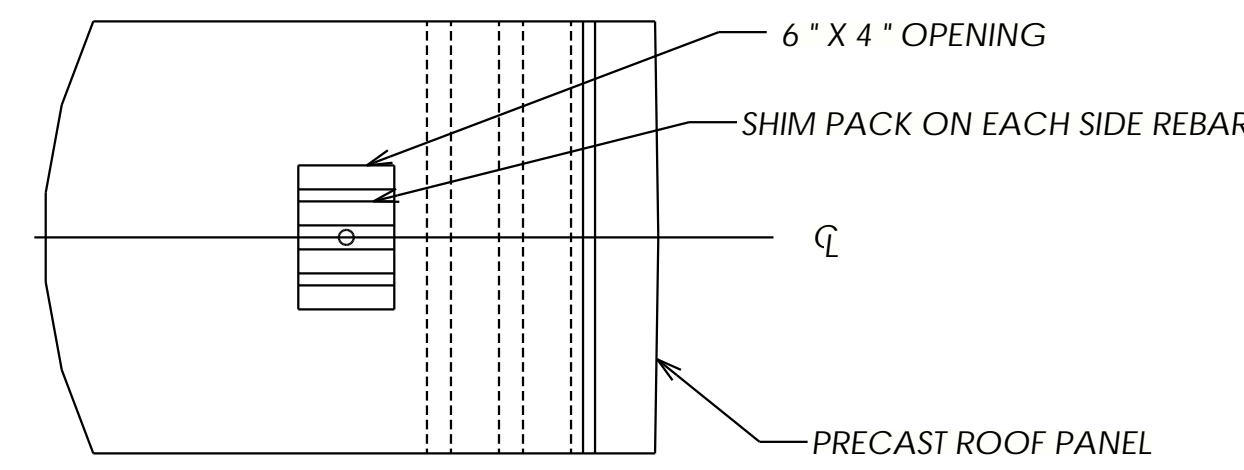
Project: TOWN OF MIDDLETOWN RAW WATER STORAGE IMPROVEMENTS  
RAW WATER STORAGE TANK  
FREDERICK COUNTY, MD

DETAILS

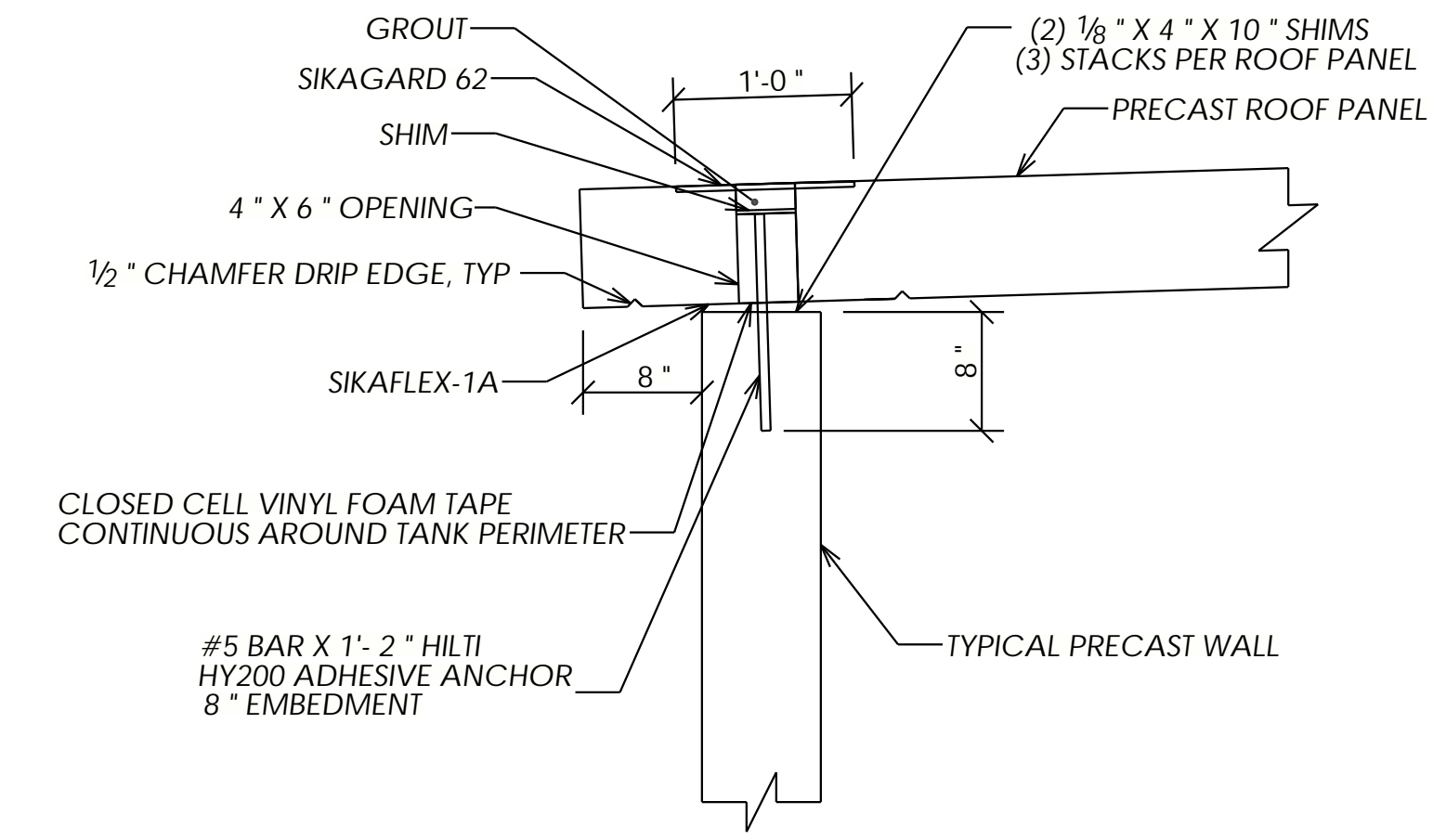
Job Number: 18039-WT  
Project Manager: GK  
Drawn By: SDR  
Checked By: JEP  
Issue Date: 04/21/2020  
Sheet No. E402



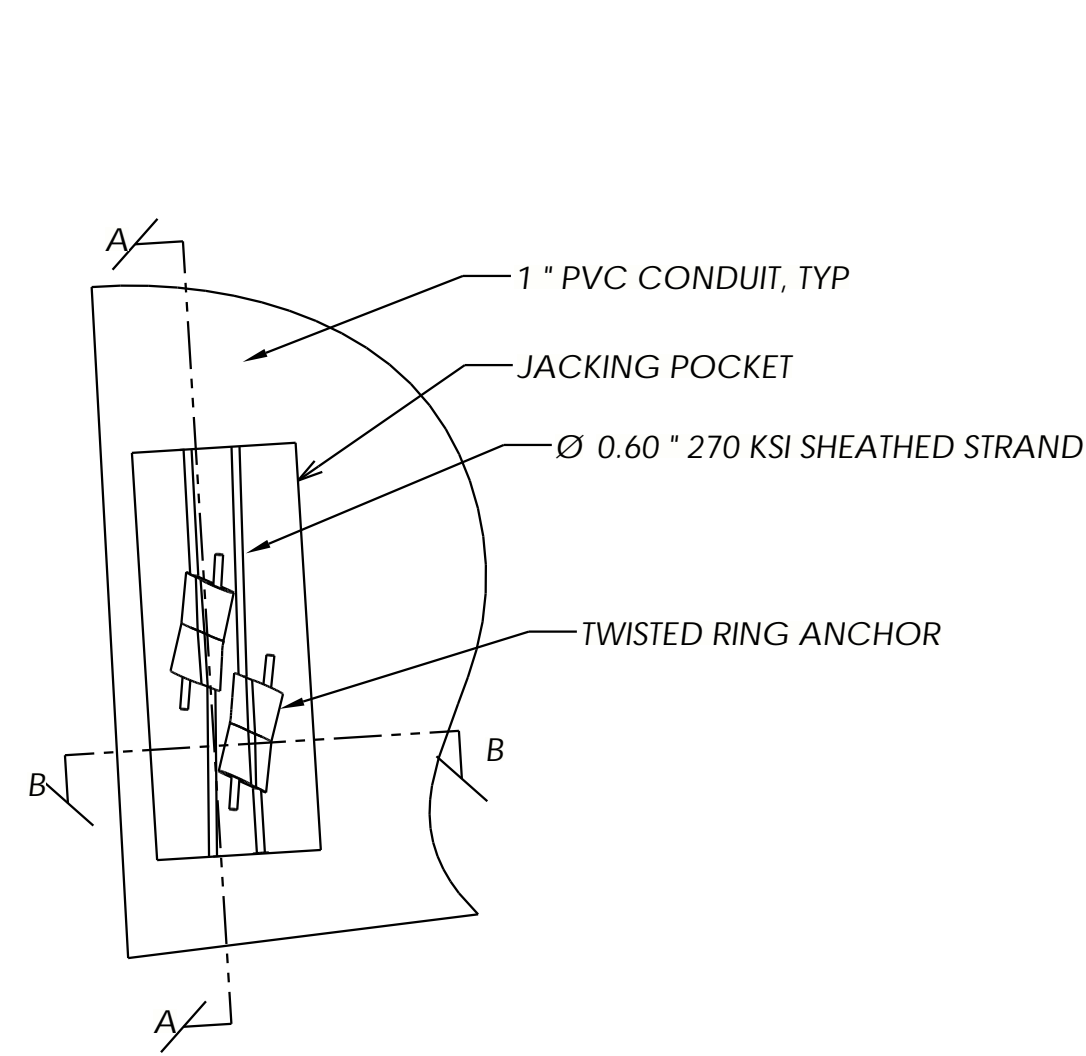
**A** BUTRESS PANEL DETAIL  
NTS



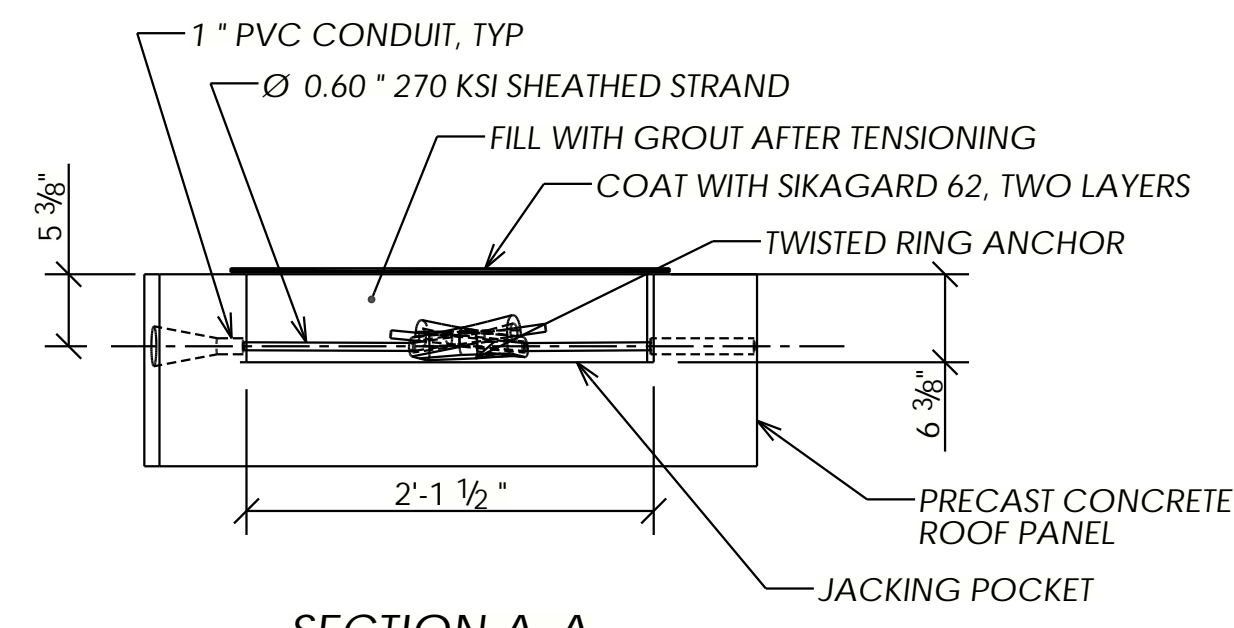
**B** ROOF PANEL TO WALL CONNECTION DETAIL PLAN  
E204 NTS



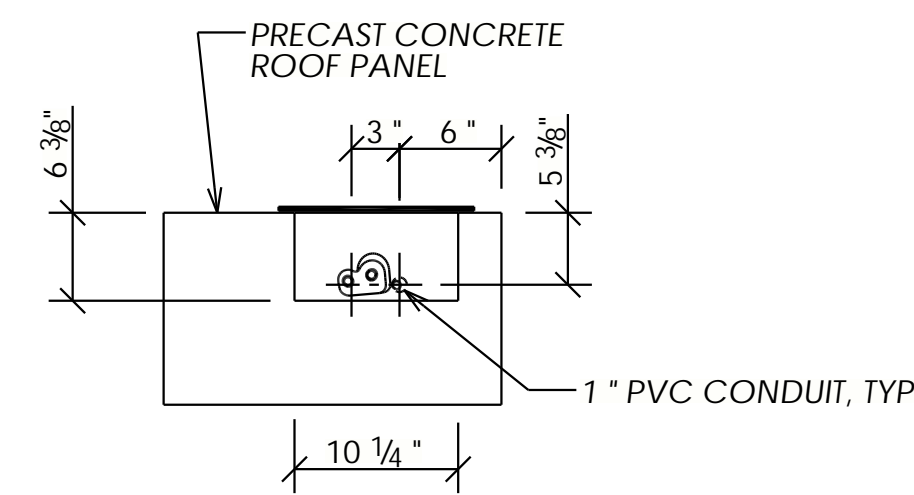
**C** ROOF PANEL WALL CONNECTION DETAIL  
E204 NTS



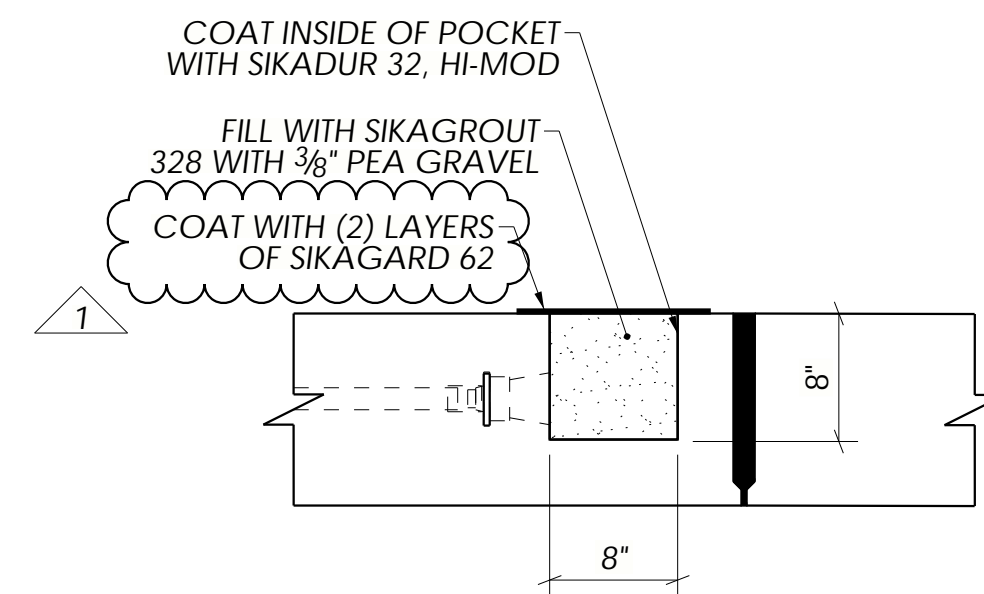
**D** JACKING POCKET  
E204 NTS



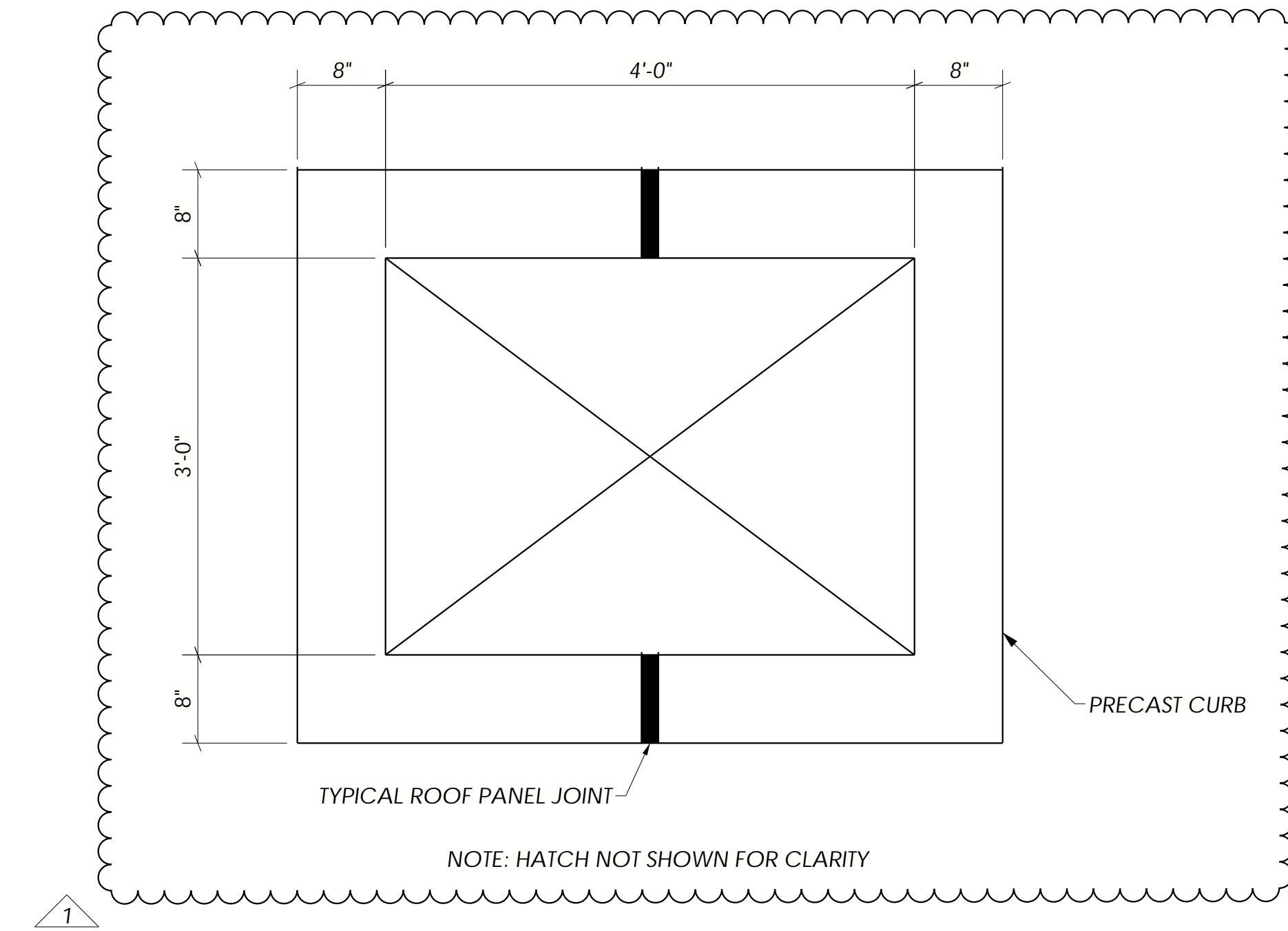
**SECTION A-A**  
NTS



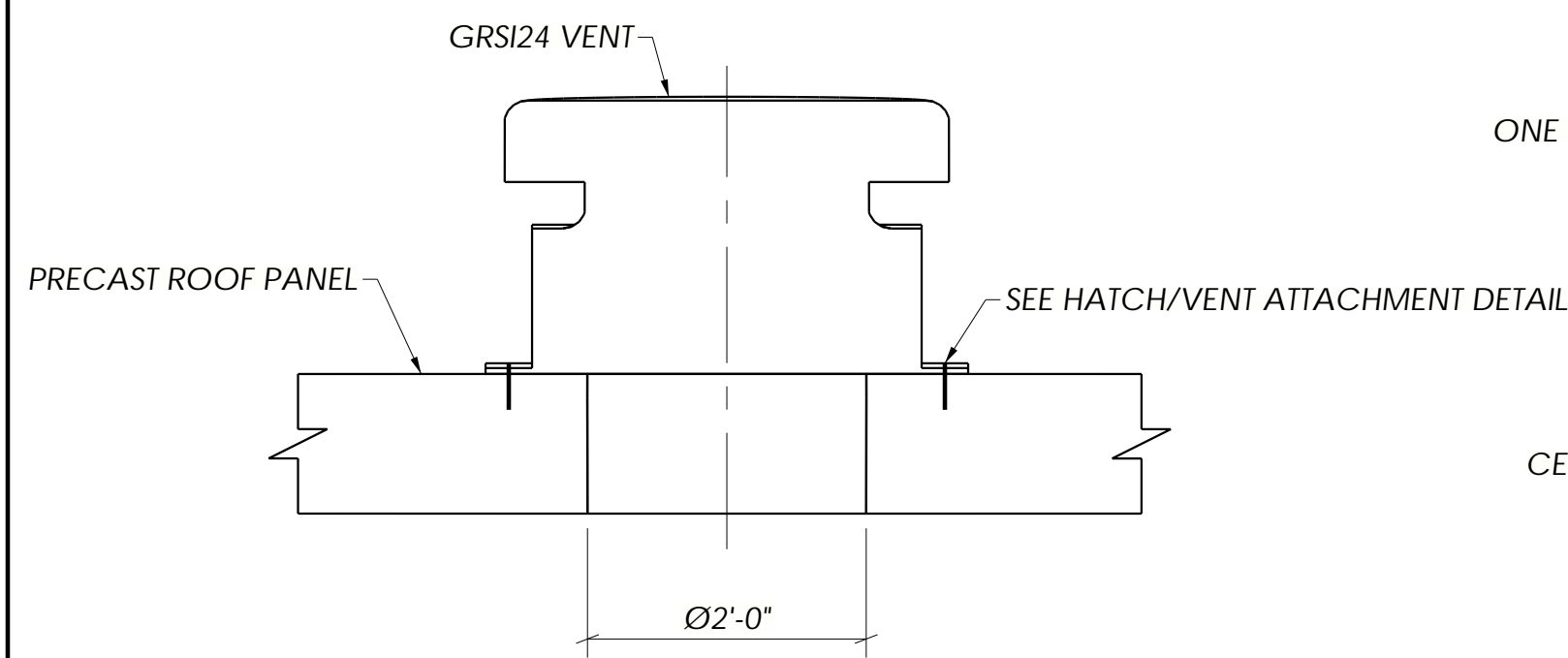
**SECTION B-B**  
NTS



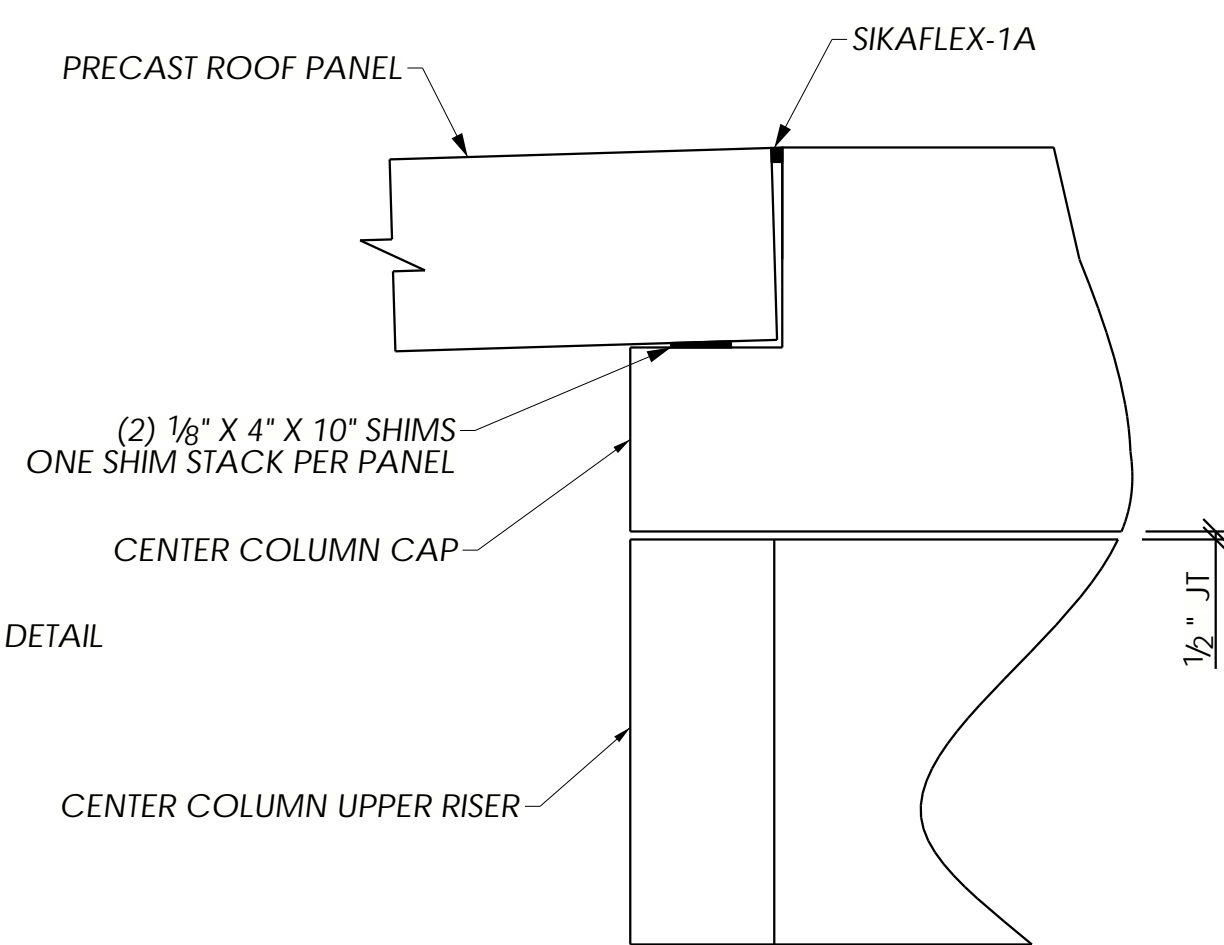
**E** ROOF ANCHOR BLOCKOUTS  
E202 NTS



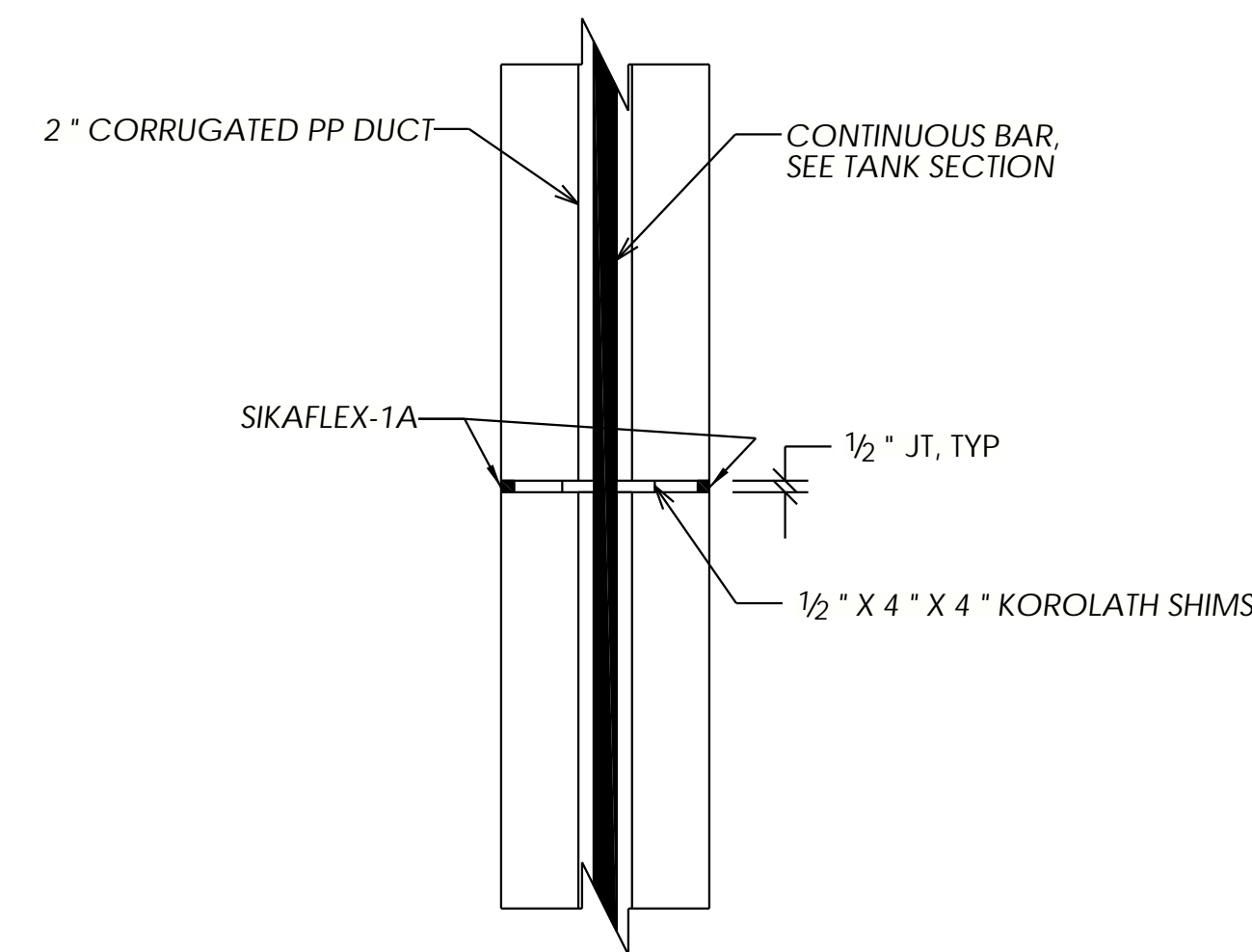
**K** ROOF HATCH DETAIL  
NTS



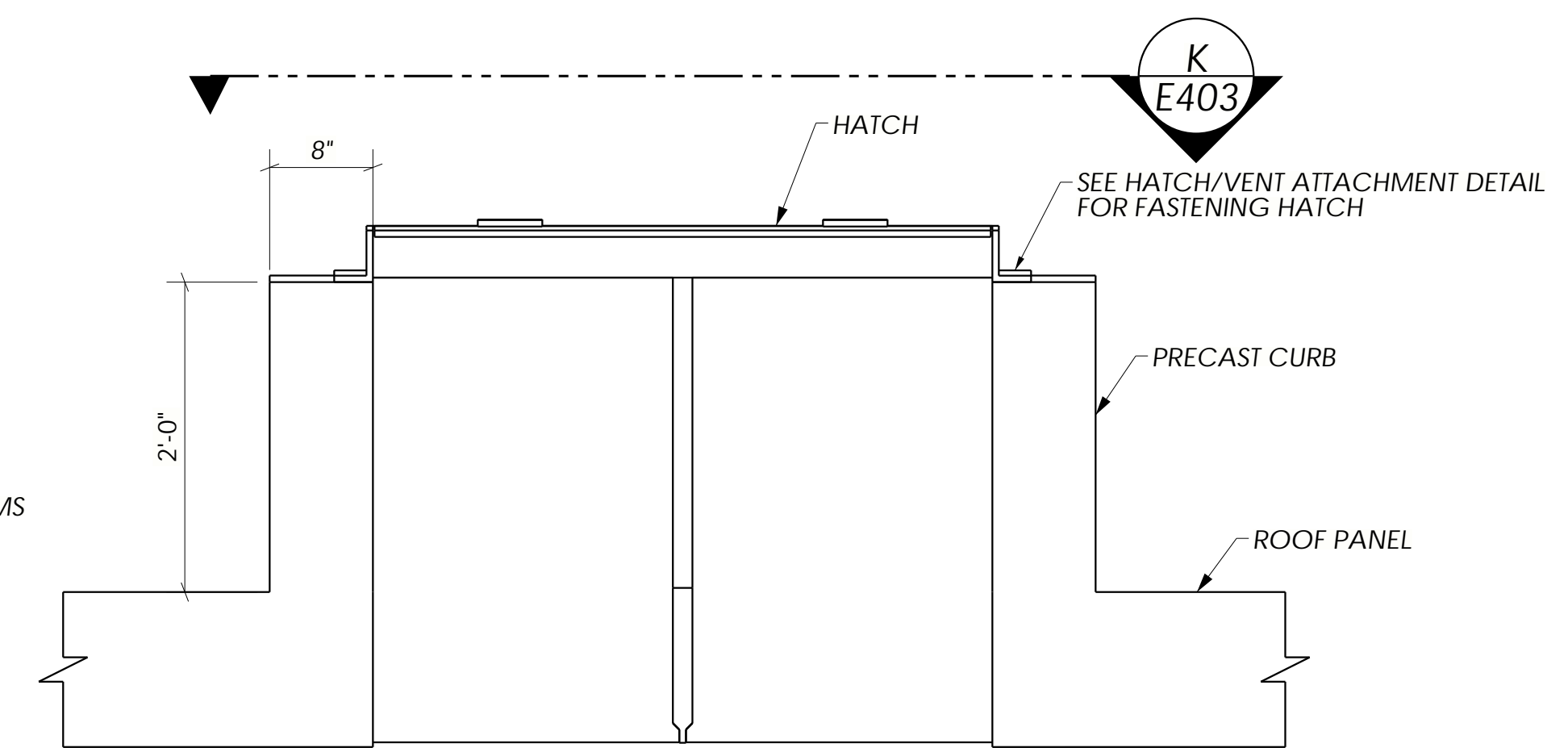
**F** VENT DETAIL  
E202 NTS



**G** ROOF PANEL TO CENTER COLUMN CONNECTION DETAIL  
E202 NTS



**H** TYP RISER JOINT DETAIL  
E303 NTS



**J** ROOF HATCH DETAIL  
E202 NTS

NO	REVISIONS	DATE	BY
1	REVISE & RESUBMIT	05/08/20	SDR

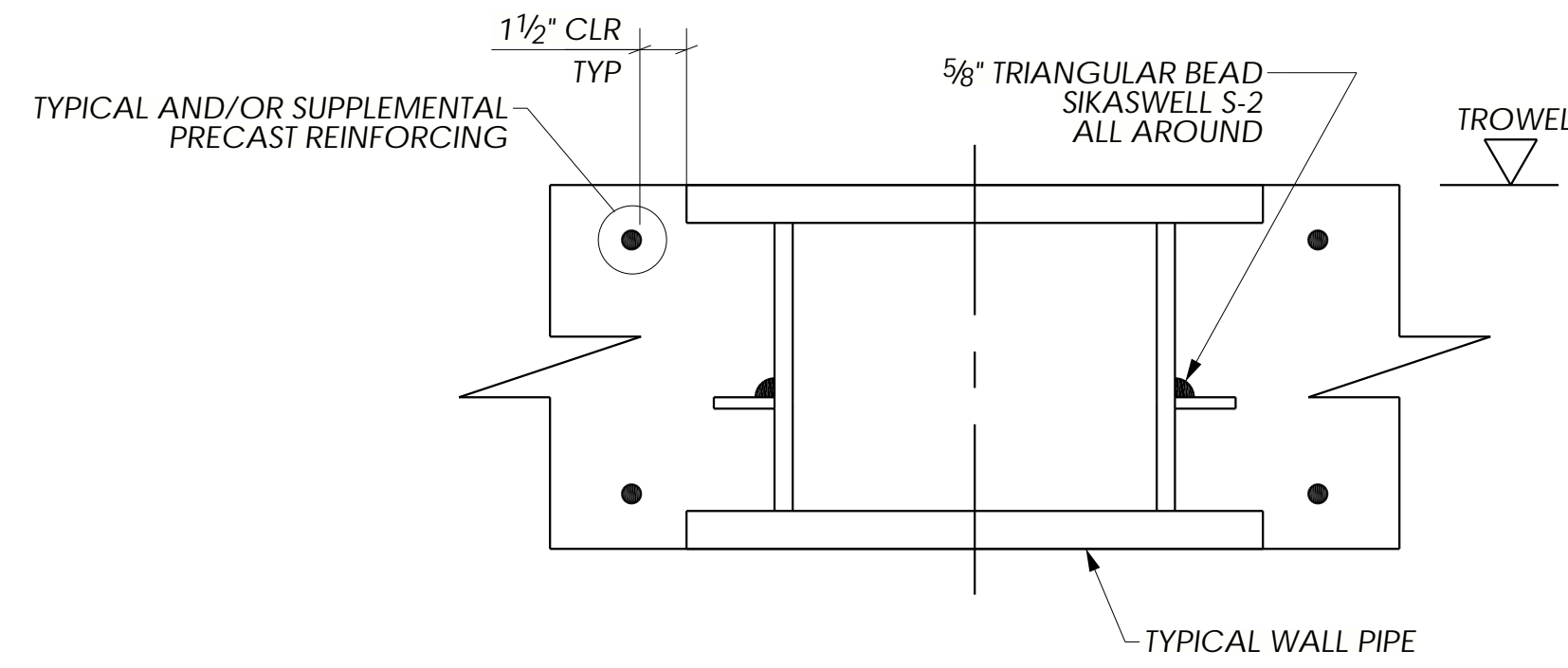
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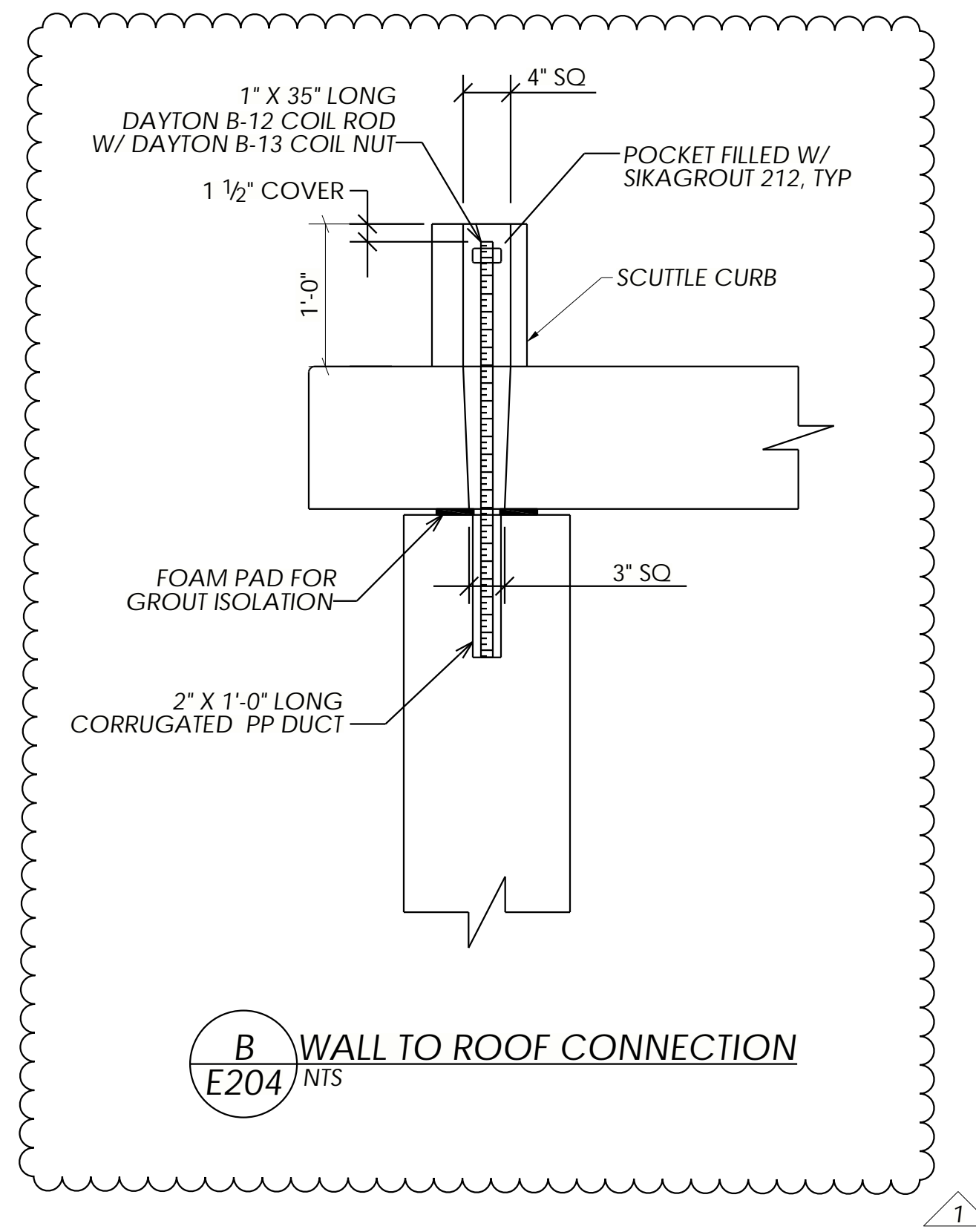
Project: TOWN OF MIDDLETOWN RAW WATER STORAGE IMPROVEMENTS  
RAW WATER STORAGE TANK  
FREDERICK COUNTY, MD

DETAILS

Job Number: 18039-WT  
Project Manager: GK  
Drawn By: SDR  
Checked By: JEP  
Issue Date: 04/21/2020  
Sheet No. E403

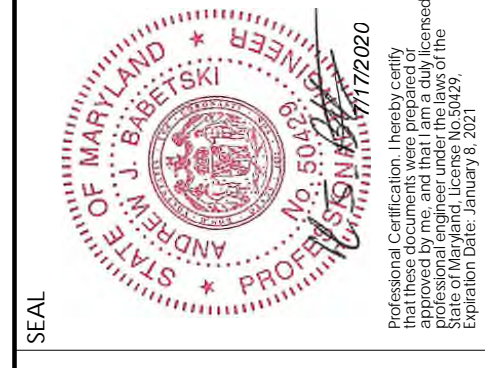


**A** TYPICAL PENETRATION DETAIL  
NTS



**B** WALL TO ROOF CONNECTION  
E204 NTS

NO	REVISIONS	DATE	BY
1	ISSUED FOR CONSTRUCTION	07/17/20	SDR



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**Project:**  
TOWN OF MIDDLETOWN  
RAW WATER STORAGE  
IMPROVEMENTS  
RAW WATER STORAGE TANK  
FREDERICK COUNTY, MD

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