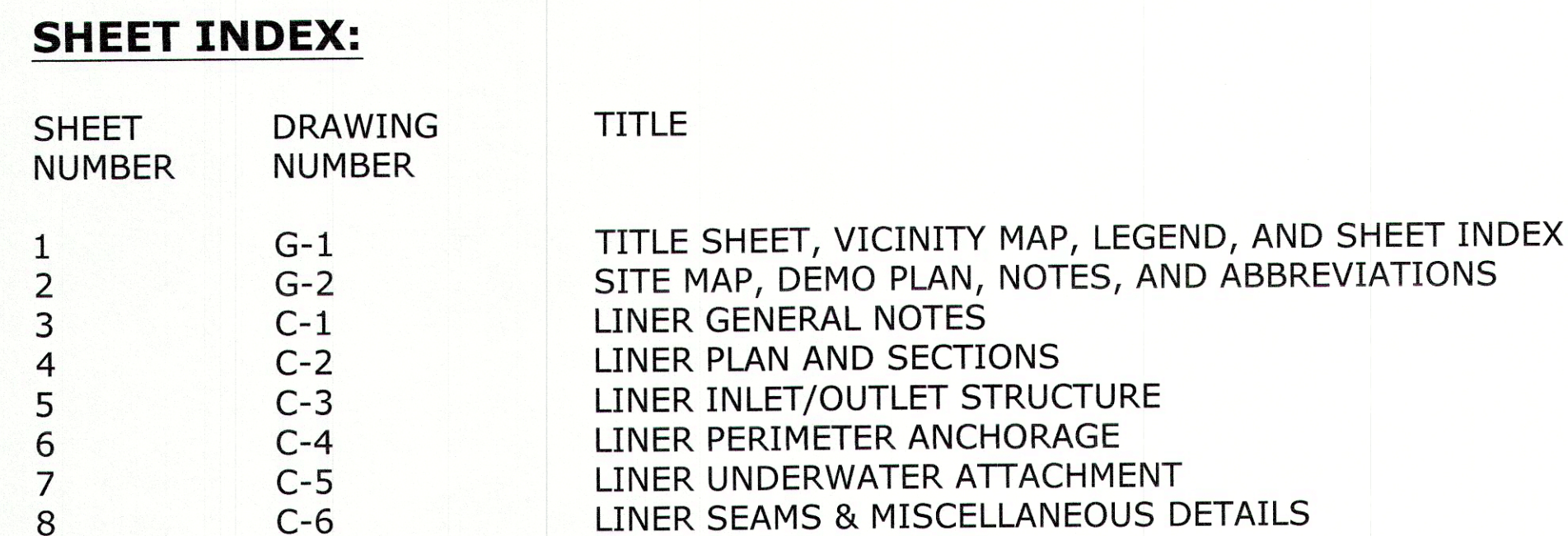



4S RANCH WATER RECLAMATION FACILITY
16595 DOVE CANYON ROAD
SAN DIEGO, CA, 92127



I HEREBY DECLARE THAT I AM THE ENGINEER OF WORK FOR THIS PROJECT, THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER THE DESIGN OF THE PROJECT AS DEFINED IN SECTION 603 OF THE BUSINESS AND PROFESSIONS CODE, AND THAT THE DESIGN IS CONSISTENT WITH CURRENT STANDARDS.

		08/15/2016
ADAM N. HOCH PROJECT OFFICER	R.C.E. 77635 EXPIRES 6/30/17	DATE



**PLANS FOR THE
CONSTRUCTION OF
4S RANCH WRF
EQUALIZATION BASIN
RELINING PROJECT
AUGUST 2016
OMWD WO NUMBER D701067**

OLIVENHAIN MUNICIPAL WATER DISTRICT
1966 Olivenhain Road
Encinitas, CA 92024
(760) 753-6466

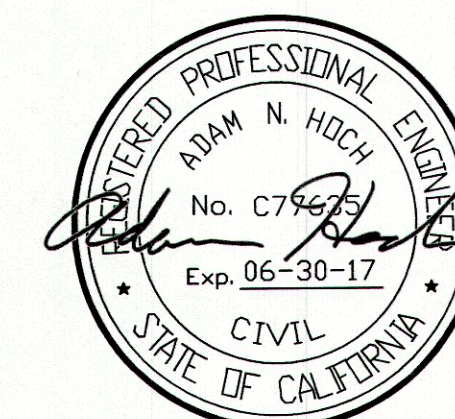
EDMUND K. SPRAGUE, PRESIDENT
ROBERT F. TOPOLOVAC, VICE PRESIDENT
LAWRENCE A. WATT, TREASURER
CHRISTY GUERIN, SECRETARY
GERALD E. VARTY, DIRECTOR

George R. Briest, P.E., R.C.E. C048853 DATE 8.31.16
ENGINEERING MANAGER

DESCRIPTION	STD DWG	SYMBOL
CABLE TELEVISION LINE	CTV	CTV
POTABLE WATER LINE	PW	PW
RECLAIMED WATER LINE	RW	RW
SEWER LINE	S	S
ELECTRICAL	E	E
TELEPHONE	TEL	TEL
GAS MAIN	GAS	GAS
STORM DRAIN	SD	SD
DRAIN LINE	D	D
OVERHEAD UTILITY	OH	OH
FENCE	X	X
CONTOURS	60	60
PROPERTY LINE	PL	PL
GRADED SLOPES		
SPOT ELEVATIONS		
WATER LINE		
FIRE HYDRANT		
GATE VALVE		
AIR VAC RELEASE VALVE		
WATER METER		
BACKFLOW PREVENTER		
THRUST BLOCK		
BLOW-OFF		
REDUCER		
CUT & PLUG EXIST. WATER		



**Know what's below.
Call 811 before you dig.**



<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>4S RANCH WRF EQUALIZATION BASIN RELINING PROJECT</p> </div> <div style="width: 50%;"> <p>TITLE SHEET, VICINITY MAP, LEGEND, AND SHEET INDEX</p> </div> </div>	<p>OLIVENHAIN Municipal Water District 1966 Olivenhain Road Encinitas, CA 92024 (760)753-6466</p>		<p>HOCH CONSULTING 3235 MOCCASIN AVENUE SAN DIEGO, CA 92117 (650)457-9767</p>		DESIGN						
	SHEET 1				DRAWN						
	DRAWING G-1				CHECK						
					MARK	DATE	BY	REVISIONS			

ORIGINAL SIZE IN INCHES

WORK TO BE DONE

THE WORK INCLUDES BUT IS NOT NECESSARILY LIMITED TO THE FOLLOWING:

PROCUREMENT AND CONSTRUCTION OF NEW BATTEN BARS AND BOLTS, CUTTING AND SALVAGING EXISTING LINER AROUND BATTEN BAR AND INLET/OUTLET STRUCTURE; INSTALLING THE NEW LINER AND GEOTEXTILE UNDERLAYER; SECURING THE LINER COMPONENTS WITH ANGLE IRONS, BOLTS, AND EPOXY; INSTALLING FLUID APPLIED MEMBRANE; TESTING SAMPLES OF WORK; AND REINSTALLING ALUMINUM RAILING; AND ALL INCIDENTAL WORK AS SHOWN OR REQUIRED IN THE CONTRACT DOCUMENTS.

SPECIFICATIONS AND DRAWINGS

IN ORDER OF PRECEDENCE:

- CONTRACT DRAWINGS
- CONTRACT SPECIFICATIONS
- OLIVENHAIN MUNICIPAL WATER DISTRICT STANDARD SPECIFICATIONS AND DRAWINGS FOR THE CONSTRUCTION OF WATER MAINS AND FACILITIES (LATEST EDITION). REVISIONS THERETO, AS CONTAINED IN THESE PROJECT SPECIFIC DRAWINGS AND SPECIFICATIONS, SHALL TAKE PRECEDENCE OVER THE STANDARD SPECIFICATIONS AND DRAWINGS.
- STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION).
- SAN DIEGO REGIONAL STANDARD DRAWINGS (LATEST EDITION).

ABBREVIATIONS

AC	ASPHALT CONCRETE OR ASBESTOS CEMENT	MFR	MANUFACTURER
ACT	AMERICAN CONCRETE INSTITUTE	MIN	MINIMUM
ACP	ASBESTOS CEMENT PIPE	(N)	NEW
ANG	ANGLE	N	NORTH OR NORTHING
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	NTS	NOT TO SCALE
APPROX	APPROXIMATELY	NO	NUMBER
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS	OC	ON CENTER
AWWA	AMERICAN WATER WORKS ASSOCIATION	OD	OUTSIDE DIAMETER
		OH	OVERHEAD
		OMWD	OLIVENHAIN MUNICIPAL WATER DISTRICT
		OR	OFFICIAL RECORD
BC	BEGIN CURVE	OSHA	OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION
BG	BELOW GRADE		
BOW	BACK OF WALL	PB	PULL BOX
BVC	BEGIN VERTICAL CURVE	PED	PEDESTAL
		PP	POWER POLE
C, CATV	CABLE TV	PSI	POUNDS PER SQUARE INCH
CA	CONCRETE ANCHOR OR CALIFORNIA	PT	POINT
CBC	CALIFORNIA BUILDING CODE	PUE	PUBLIC UTILITY EASEMENT
CI	CAST IRON	PVC	POLYVINYL CHLORIDE
CL	CENTERLINE OR CLASS	PVI	POINT OF VERTICAL INTERSECTION
CLR	CLEAR OR CLEARANCE	PW	POTABLE WATER
CML	CEMENT MORTAR LINED		
COE	CITY OF ENCINITAS	R	RADIUS
COMM	COMMUNICATION	R/W	RIGHT OF WAY
CONC	CONCRETE	RCP	REINFORCED CONCRETE PIPE
CONN	CONNECT	REINF	REINFORCED/REINFORCEMENT
CONT	CONTINUOUS	REQD	REQUIRED
CY	CUBIC YARDS	RG	ROUGH GRADING
		ROS	RECORD OF SURVEY
DBL	DOUBLE	RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
DG	DISINTEGRATED GRANITE	RW	RECYCLED WATER
DI	DRAIN INLET OR DUCTILE IRON		
DIA	DIAMETER	S	SLOPE OR SOUTH
DR	DIMENSION RATIO	SCH	SCHEDULE
DWG(S)	DRAWING(S)	SD	STORM DRAIN
D/W	DRIVEWAY	SDRSO	SAN DIEGO REGIONAL STANDARD DRAWINGS
(E)	EXISTING	SF	SQUARE FEET
E	ELECTRIC, EAST OR EASTING	SHT	SHEET
EA	EACH	SPECS	SPECIFICATIONS
EAS	EMULSION-AGGREGATE	SQ	SQUARE
EASMT	EASEMENT	SS, SST	STAINLESS STEEL
EC	END CURVE	SSPWC	STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION
ELEV, EL	ELEVATION		
EVC	END VERTICAL CURVE	ST	STREET
EW	EACH WAY	STA	STATION
EX, EXIST	EXISTING	STD	STANDARD
		STL	STEEL
FCA	FLANGED COUPLING ADAPTER	STRUCT	STRUCTURAL
FEB	FLOW EQUALIZATION BASIN	SWPPP	STORM WATER POLLUTION PREVENTION PLAN
FG	FINISH GRADE		
FL	FLOW LINE	t	THICKNESS
FLG	FLANGE	T	TELEPHONE
FO	FIBER OPTIC	T&B	TOP AND BOTTOM
FOW	FRONT OF WALL	TB	THRUST BLOCK
FS	FINISHED SURFACE	TBD	TO BE DETERMINED
FT (OR ')	FOOT/FEET	TC	TOP OF CURB
		TEMP	TEMPORARY
G	GAS	TG	TOP OF GRATING
GA	GAUGE	THK	THICK
GB	GRADE BREAK	TP	TOP OF PAVEMENT
GP	GUARD POST	TSL	THICKENED SLUDGE
GV	GATE VALVE	TYP	TYPICAL
		UG	UNDERGROUND
H, HORIZ	HORIZONTAL	UNK	UNKNOWN
HDC	HIGH DEFLECTION COUPLING	UNO	UNLESS NOTED OTHERWISE
HGL	HYDRAULIC GRADE LINE		
HPL	HIGH POINT, HIGH PRESSURE, OR HORSE POWER	V, VERT	VERTICAL
HWL	HIGH WATER LEVEL		
		W	WEST OR WIDTH
IE, INV	INVERT ELEVATION	W, WTR	WATER
IN (OR ")	INCH	W/	WITH
IRR	IRRIGATION	W/O	WITHOUT
		WM	WATER METER
L	LENGTH	WO	WORK ORDER
LB	POUNDS	WWM	WELDED WIRE MESH
LF	LINEAR FOOT		
LWL	LOW WATER LEVEL		
		&	AND
MAX	MAXIMUM	±	PLUS OR MINUS

GENERAL NOTES

- THE CONTRACTOR SHALL DESIGN, CONSTRUCT, AND MAINTAIN ALL SAFETY DEVICES, INCLUDING SHORING, AND SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL LOCAL, STATE, AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS, AND REGULATIONS. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND WILL NOT BE LIMITED TO NORMAL WORKING HOURS.
- THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES REQUIRED TO PROTECT ADJACENT PROPERTIES AND IMPROVEMENTS DURING ALL PROJECT OPERATIONS. DAMAGED OR DESTROYED ITEMS SHALL BE REPAIRED OR REPLACED TO THE CONDITION EXISTING PRIOR TO WORK BY THE CONTRACTOR AT NO COST TO THE DISTRICT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MONUMENTATION AND/OR BENCHMARKS WHICH WILL BE DISTURBED OR DESTROYED BY CONSTRUCTION. SUCH POINTS SHALL BE REFERENCED AND REPLACED WITH APPROPRIATE MONUMENTATION BY A LICENSED LAND SURVEYOR OR A REGISTERED CIVIL ENGINEER AUTHORIZED TO PRACTICE LAND SURVEYING. A CORNER RECORD OR RECORD OF SURVEY, AS APPROPRIATE, SHALL BE FILED BY THE LICENSED LAND SURVEYOR OR REGISTERED CIVIL ENGINEER AS REQUIRED BY THE LAND SURVEYOR'S ACT. THE CONTRACTOR SHALL PROTECT ALL EXISTING SURVEY MONUMENTS THAT ARE LOCATED WITHIN 10 FEET OF THE CENTERLINE OF CONSTRUCTION BY COVERING THE MONUMENTS WITH 1-INCH THICK STEEL PLATE DURING EXCAVATION AND BACKFILL OPERATIONS OR SHALL EMPLOY ALTERNATIVE PROTECTION MEASURES NECESSARY TO AVOID DISTURBANCE OR DAMAGE TO THE MONUMENTS. ALTERNATIVE PROTECTION MEASURES SHALL BE SUBMITTED FOR DISTRICT REVIEW AND APPROVAL IN ACCORDANCE WITH SECTION 01300.
- THESE DOCUMENTS HAVE BEEN PREPARED FOR A SPECIFIC PROJECT AND SHALL NEITHER BE ALTERED NOR REUSED FOR ANY OTHER PURPOSE. ALSO, THESE DOCUMENTS DO NOT REPRESENT AS-BUILT CONDITIONS. IF THESE DOCUMENTS ARE ALTERED INTENTIONALLY OR UNINTENTIONALLY, OR REUSED WITHOUT THE DESIGN ENGINEER'S WRITTEN APPROVAL, IT WILL BE AT THE SOLE RISK AND RESPONSIBILITY OF THE USER. THE ACT OF ALTERING OR REUSING IS CONSTRUED AS INDEMNIFYING AND HOLDING THE DESIGN ENGINEERING FIRM AND ITS EMPLOYEES AND SUBCONSULTANTS HARMLESS FROM ALL CLAIMS, DAMAGES, AND EXPENSES, INCLUDING ATTORNEY FEES, ARISING OUT OF SUCH ACT.
- CONTRACTOR MAY STAGE MATERIAL AND EQUIPMENT ON SITE. CONTRACTOR SHALL COORDINATE THEIR CONSTRUCTION STAGING AREAS WITH THE DISTRICT PRIOR TO MOBILIZATION.
- WORK HOURS SHALL BE BETWEEN THE HOURS OF 7:00 AM TO 3:00 PM, MONDAY THROUGH FRIDAY. NO WORK OF ANY KIND, INCLUDING WARMING UP OR MOVEMENT OF EQUIPMENT IS PERMITTED OUTSIDE THESE HOURS OF OPERATION.
- THE CONTRACTOR SHALL FURNISH TO THE ENGINEER OF WORK AS-BUILT PLANS FOR ALL NEW IMPROVEMENTS SHOWN ON THESE PLANS.
- IF REQUIRED TO COMPLETE WORK, FINISH GRADE OF NEW CONCRETE PAVING SHALL CONFORM TO EXISTING SITE GRADES OR AS SHOWN ON THESE DRAWINGS AS DIRECTED BY THE ENGINEER. STRAIGHT GRADES SHALL BE MAINTAINED BETWEEN FINISH ELEVATIONS AS SHOWN.
- ALL SURPLUS SEDIMENT, EXCAVATED SOIL, AND DEBRIS SHALL BE LEGALLY DISPOSED OFF SITE. ALL COSTS FOR TRANSPORTATION AND DISPOSAL SHALL BE INCLUDED IN THEIR APPURTENANT ITEMS OF WORK. ESTIMATED QUANTITIES FOR EARTHWORK AND IMPORTED MATERIALS ARE APPROXIMATE AND CONTRACTOR SHALL DEVELOP HIS/HER OWN ESTIMATES FOR BIDDING PURPOSES.
- THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE DISTRICT AND HOCH CONSULTING, ITS EMPLOYEES, OFFICERS, AGENTS, OR SUBCONSULTANTS HARMLESS AGAINST ANY AND ALL CLAIMS BY ANY PARTIES ARISING FROM, OR RELATED TO, ANY AND ALL DAMAGES, INCLUDING LEGAL COSTS AND ATTORNEY'S FEES, RESULTING FROM INTERFERENCE WITH, INTERRUPTION OF, DAMAGE TO, OR ANY AND AL INJURIES WHICH RESULT FROM DAMAGE CAUSED TO SUBSURFACE INSTALLATION, WHICH IS UNFORESEEN AND DESPITE ENGINEER'S EFFORT DURING THE DESIGN PROCESS WAS NOT LOCATED, EXCEPTING ONLY THE GROSS NEGLIGENCE OR WILLFUL MISCONDUCT OF THE ENGINEER IN PROVIDING ITS SERVICES.

DEMOLITION NOTES

- THE EXISTING ALUMINUM RAILING SHALL BE REMOVED AND REINSTALLED AS NEEDED TO INSTALL THE NEW GEOTEXTILE AND GEOMEMBRANE LINING. ANY PARTS DAMAGED BY THE CONTRACTOR DURING REMOVAL, STORAGE, OR REINSTALLATION SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER. RAILING TO BE REINSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. THE CONTRACTOR IS REQUIRED TO PERFORM ALL WORK IN ACCORDANCE TO COMPLY WITH FEDERAL STATE AND LOCAL REGULATIONS INCLUDING BUT NOT LIMITED TO OSHA AND CAL/OSHA REQUIREMENTS.
- PROTECT IN PLACE ALL EXISTING IMPROVEMENTS NOT SPECIFICALLY DESIGNATED FOR REMOVAL OR REHABILITATION
- THE EXISTING LINER AND GEOTEXTILE UNDERLAYMENT SHALL REMAIN. THE NEW LINER SHALL BE INSTALLED ON TOP OF THE EXISTING LINER AND GEOTEXTILE UNDERLAYMENT. TO GREATEST EXTENT POSSIBLE, THE CONTRACTOR SHALL PROTECT IN PLACE THE CONCRETE CURB AND CONCRETE STRUCTURES, AND SALVAGE THE BATTEN BARS AND HARDWARE TO BE REUSED FOR CONSTRUCTING THE NEW EQUALIZATION BASIN LINERS.

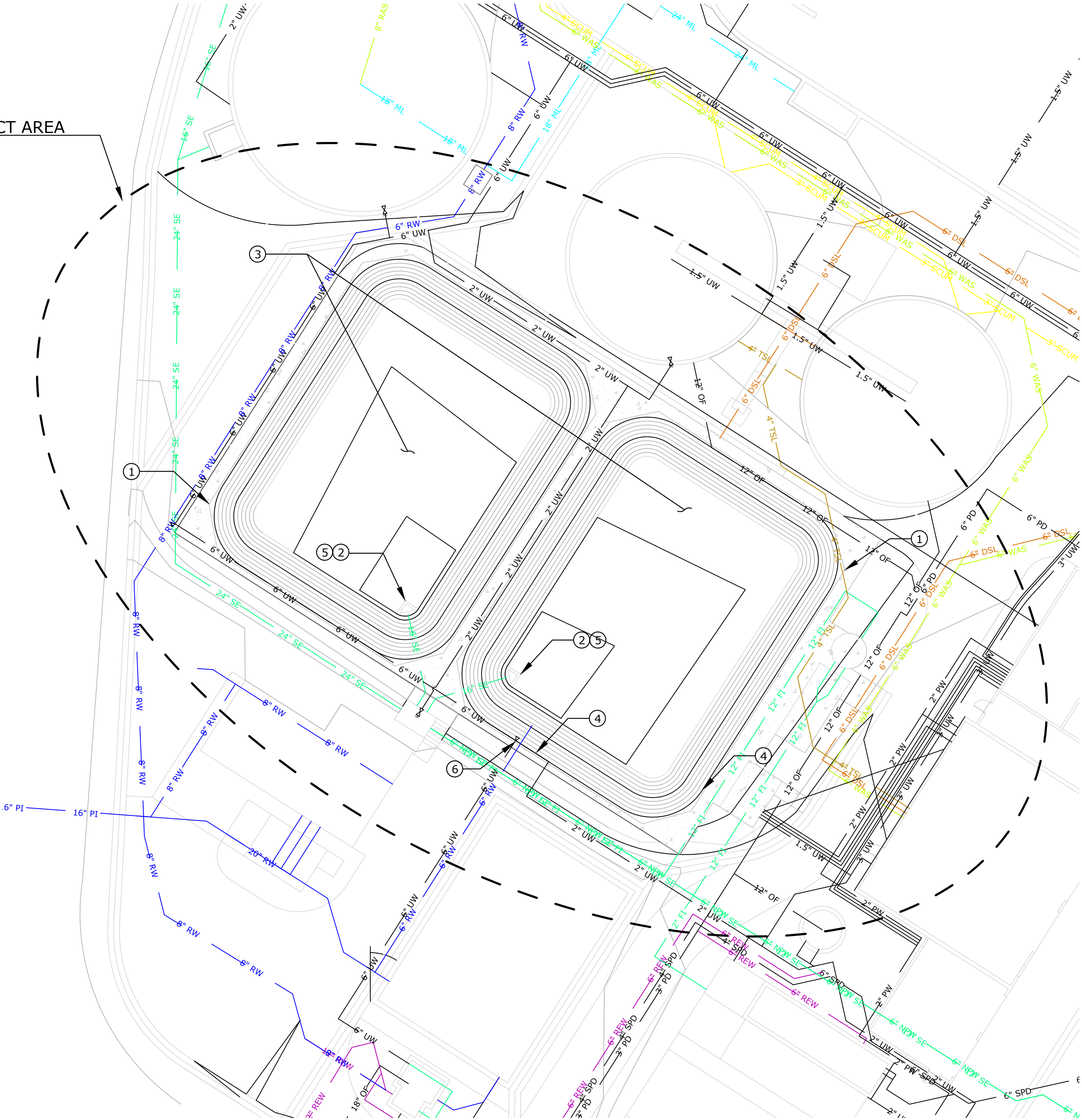
CONSTRUCTION NOTES

- CONSTRUCT PERIMETER ANCHOR PER DWG. C-1 THROUGH C-6.
- CONSTRUCT SUBMERGED ANCHOR PER DWG. C-1 THROUGH C-6.
- INSTALL GEOTEXTILE AND GEOMEMBRANE LINING PER DWG. C-1 THROUGH C-6.
- THE EXISTING CHEMICAL PIPES SHALL BE REMOVED AND REINSTALLED AS NEEDED TO INSTALL THE NEW GEOTEXTILE AND GEOMEMBRANE LINING. CONTRACTOR TO FIELD VERIFY EXTENT OF PIPING. REINSTALLATION SHALL BE IN KIND.
- THE EXISTING PUMPS AND HOSES SHALL BE REMOVED AND REINSTALLED AS NEEDED TO INSTALL THE NEW GEOTEXTILE AND GEOMEMBRANE LINING.
- THE EXISTING PVC AT TOP OF SLOPE ON EAST BASIN SHALL BE REMOVED AND REINSTALLED AS NEEDED TO INSTALL THE NEW GEOTEXTILE AND GEOMEMBRANE LINING.



SURVEY NOTES

- SURVEY WAS GENERATED FROM RECORD DRAWINGS, APRIL 2002, WASTEWATER TREATMENT PLANT EXPANSION TO 2.0 MGD.

PROJECT AREA



SITE MAP

DESIGN		DRAWN		CHECK		MARK		DATE		BY		REVISIONS	
 HOCH CONSULTING 3235 MCCASIN AVENUE SAN DIEGO, CA 92107 (619) 441-9767													
 OLIVENHAIN Municipal Water District 1966 Olivenhain Road Encinitas, CA 92024 (760) 753-6466													
4S RANCH WRF EQUALIZATION BASIN RELINING PROJECT													
SITE MAP, DEMO PLAN, NOTES, AND ABBREVIATIONS													
SHEET		DRAWING											
2		G-2											

ORIGINAL SCALE IN INCHES

0 10 20

1 2 3 4

6

ABBREVIATIONS

AB	ANCHOR BOLT	EXP	EXPANSION	#	NUMBER
ABV	ABOVE	EXT	EXTERIOR		
AC	ASPHALT CONCRETE			O/	OVER
ACI	AMERICAN CONCRETE INSTITUTE	FDN	FOUNDATION	O/C	ON CENTER
		FEB	FLOW EQUALIZATION BASIN	OD	OUTSIDE DIAMETER
ADD	ADDITIONAL			OH	OPPOSITE HAND
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	FF	FINISH FLOOR	OPNG	OPENING
		FG	FINISH GRADE	OS	OPPOSITE SIDE
AISI	AMERICAN IRON AND STEEL INSTITUTE	FJ	FLOOR JOIST	OSHA	OCCUPATIONAL SAFETY AND HEALTH
		FLG	FLANGE		
ALT	ALTERNATE	FLR	FLOOR	OVWMD	OLIVENHAIN
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	FOC	FACE OF CONCRETE		MUNICIPAL WATER DISTRICT
		FOM	FACE OF MASONRY		
		FP	FULL PENETRATION	OZ	OUNCE
		FRMG	FRAMING		
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	FS	FAR SIDE	PE	POLYETHYLENE
		FTG	FOOTING	PERF	PERFORATED
				PERP	PERPENDICULAR
AWS	AMERICAN WELDING SOCIETY	GA	GAUGE	PG	PLATE GIRDER
		GALV	GALVANIZED	PI	POINT INFLECTION
@	AT	GR	GRADE	P	PROPERTY LINE OR PLATE
				PP	PARTIAL
BC	BEGIN CURVE OR BOLT CIRCLE	H	HIGH		PENETRATION
		H1E	HOOK 1-END		
BLDG	BUILDING	H2E	HOOK 2-ENDS	PVC	POLYVINYL CHLORIDE
BLK	BLOCK	HDG	HOT DIP GALVANIZED	PSF	POUNDS PER SQUARE
BLKG	BLOCKING	HDPE	HIGH DENSITY POLYETHYLENE		FOOT
BM	BEAM			PSI	POUNDS PER SQUARE
BOS	BOTTOM OF SLOPE (TOE OF SLOPE)	HDR	HEADER		INCH
		HGR	HANGER	PW	POTABLE WATER
BOT	BOTTOM	HORIZ	HORIZONTAL		
BRG	BEARING	HR	HANDRAIL	RAD	RADIUS
BS	BOTH SIDES	HSB	HIGH STRENGTH BOLT	R	RADIUS
BTWN	BETWEEN	HSS	HOLLOW STEEL SECTION	RR	ROOF RAFTER
			HEIGHT	RD	ROOF DRAIN
				REINF	REINFORCING
C	CHANNEL OR CAMBER	HT		REM	REMAINDER
CANT	CANTILEVER			REQD	REQUIRED
CB	CARRIAGE BOLT			RPP	REINFORCED POLYPROPYLENE
C/C	CENTER TO CENTER	ICBO	INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS		
CFS	CUBIC FEET PER SECOND			SEC	SECTION
CIP	CAST IN PLACE			SCH	SCHEDULE
CJ	CONSTRUCTION JOINT, CONTROL JOINT	ICC	INTERNATIONAL CODE COUNCIL	SHT	SHEET
		ID	INSIDE DIAMETER	SIM	SIMILAR
CL	CENTER LINE	INSUL	INSULATION	SM	SHEET METAL
CLR	CLEAR	INT	INTERIOR	SMS	SHEET METAL SCREW
CMU	CONCRETE MASONRY UNIT	INV	INVERT OR INVERTED	SPEC	SPECIFICATION
				SOG	SLAB ON GRADE
COL	COLUMN	JST	JOIST	SQ	SQUARE
CONC	CONCRETE	JT	JOINT	SST	STAINLESS STEEL
CONT	CONTINUOUS			STAG	STAGGER
CSPE	CHLOROSULFONATED POLYETHYLENE	K	KIP (1000 LBS)	STD	STANDARD
				STIFF	STIFFENER
				STL	STEEL
		L	LOW	STRUCT	STRUCTURAL
		LB	POUND	SUSP	SUSPENDED
DBL	DOUBLE	LG	LENGTH OR LONG	SYM	SYMMETRICAL
DET	DETAIL	LLH	LONG LEG		
DFT	DRY FILM THICKNESS			T&B	TOP AND BOTTOM
DIA	DIAMETER	LLV	LONG LEG VERTICAL	T&G	TONGUE AND GROOVE
Ø	DIAMETER				
DIM	DIMENSION	LONG	LONGITUDINAL	THK	THICK
DIR	DIRECTION	LT	LIGHT	TOC	TOP OF CONCRETE
DN	DOWN	LVL	LEVEL	TOF	TOP OF FOOTING
DO	DITTO			TOS	TOP OF STEEL OR TOP OF SLOPE
DWG	DRAWING				
DWL	DOWEL	MANUF	MANUFACTURER	TRANS	TRANSVERSE
		MAS	MASONRY	TS	TUBE STEEL
EA	EACH	MATL	MATERIAL	TYP	TYPICAL
EC	END CURVE	MAX	MAXIMUM		
EF	EACH FACE	MB	MACHINE BOLT		
EIA	ETHYLENE INTERPOLYMER ALLOY	MC	MISCELLANEOUS CHANNEL	UNO	UNLESS NOTED OTHERWISE
		MECH	MECHANICAL	UPP	UNREINFORCED POLYPROPYLENE
EJ	EXPANSION JOINT	MGD	MILLION GALLONS PER DAY	UT	ULTRASONIC TEST
ELECT	ELECTRICAL				
ELEV	ELEVATION	MIN	MINIMUM		
EOS	EDGE OF SLAB	MISC	MISCELLANEOUS		
EPDM	ETHYLENE PROPYLENE DIENE MONOMER	MTL	METAL	VERT	VERTICAL
EQUIP	EQUIPMENT	NIC	NOT IN CONTRACT	W	WIDE
ES	EACH SIDE	NOM	NOMINAL	W/	WITH
EW	EACH WAY	NS	NEAR SIDE	W/O	WITHOUT
EXIST	EXISTING	NTS	NOT TO SCALE	WP	WORK POINT
				WW	WASTE WASHWATER
				WWF	WELDED WIRE FABRIC

STAINLESS STEEL:

1. STAINLESS STEEL SHALL BE TYPE 316, UNLESS NOTED OTHERWISE ON DRAWINGS. WHERE WELDING IS REQUIRED, STAINLESS STEEL SHALL BE TYPE 316L.
2. STAINLESS STEEL BARS AND SHAPES SHALL CONFORM TO ASTM A276.
3. STAINLESS STEEL PLATE, SHEET, AND STRIP SHALL CONFORM TO ASTM A240.
4. STAINLESS STEEL PIPE SHALL CONFORM TO ASTM A312, GRADE TP316L.
5. STAINLESS STEEL TUBING SHALL CONFORM TO ASTM A554, GRADE MT316L.
6. STAINLESS STEEL WELD ELECTRODES SHALL CONFORM TO AWS A5.4 AND SHALL HAVE A MINIMUM YIELD STRENGTH OF 70 KSI. ELECTRODES SHALL BE E304L FOR WELDING TYPE 304L STAINLESS STEEL TO TYPE 304L STAINLESS STEEL, OR E316L FOR WELDING TYPE 316L STAINLESS STEEL TO TYPE 316L STAINLESS STEEL.
7. STAINLESS STEEL WELDED ZONES SHALL BE PICKLED AND PASSIVATED USING AVESTA PICKLING PASTE AND NEUTRALIZING PASTE, PER THE MANUFACTURER'S PRINTED INSTRUCTIONS.
8. STAINLESS STEEL WELD PROCEDURES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS B2.1.
9. WELDING OF STAINLESS STEEL PIPE OR TUBING SHALL BE IN ACCORDANCE WITH AWS D10.4.
10. ALL WELDING SHALL BE DONE BY AWS QUALIFIED WELDERS AND CERTIFIED BY AN INDEPENDENT TESTING AGENCY.
11. ALL FASTENERS SHALL BE TYPE 316 STAINLESS STEEL, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
12. STAINLESS STEEL STUDS AND BOLTS SHALL CONFORM TO ASTM A193, GRADE 8MA OR GRADE 8MNA.
13. STAINLESS STEEL NUTS SHALL CONFORM TO ASTM A194, GRADE 8MA OR GRADE 8MNA.
14. EDGES, ENDS, AND CORNERS OF MEMBERS, BARS, PLATES, AND ALL WELDS (SHOP AND FIELD) SHALL BE STRUCK, GROUND SMOOTH, AND DEBURRED. ALL FINISHED SURFACES SHALL BE ROUNDED AND SMOOTH.
15. FABRICATION AND ERECTION DRAWINGS SHALL BE APPROVED BY THE OWNER PRIOR TO THE START OF FABRICATION.

MISCELLANEOUS METALS

1. CARBON STEEL SHALL BE ASTM A36, A108, A283, A992.
2. WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1. WELDERS SHALL BE CERTIFIED BY THE GOVERNING CODE AUTHORITY. WELDED JOINTS SHALL CONFORM TO THE AWS PREQUALIFIED JOINT DETAILS.
3. ELECTRODES SHALL BE 70 KSI LOW HYDROGEN. ALL WELD FILLERS SHALL BE CAPABLE OF PRODUCING WELDS WITH A CHARPY V-NOTCH IMPACT TEST OF 20 FT-LBS AT -20°F IN ACCORDANCE WITH ASTM A673. AUTOMATIC WELDING PROCESS SHALL BE SUBMERGED ARC WELDING (SAW). FIELD WELDING PROCESS MAY BE SHIELDED METAL ARC WELDING (SMAW).
4. GALVANIZED ITEMS SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123 WITH AN AVERAGE WEIGHT OF 2.0 OUNCES PER SQUARE FOOT.

GEOSYNTHETICS:

1. GEOMEMBRANE LINER AND LINER ATTACHMENT STRIP SHALL BE REINFORCED FLEXIBLE ETHYLENE INTERPOLYMER ALLOY (EIA) GEOMEMBRANE MATERIAL, 8228 XR-3, MANUFACTURED BY SEAMAN CORPORATION OR COOLGUARD MPK36, MANUFACTURED BY COOLEY GROUP. COLOR SHALL BE EITHER WHITE OR TAN TOP SIDE / BLACK BOTTOM SIDE.
2. RUBBER GASKET SHALL BE 35 ± 5 TYPE A DUROMETER, FOOD OR POTABLE GRADE EPDM.
3. GEOTEXTILE SHALL BE A NONWOVEN, POLYPROPYLENE FILAMENT GEOTEXTILE MATERIAL. GEOTEXTILE WEIGHT SHALL BE AS INDICATED ON THE DRAWINGS AT SPECIFIC LOCATIONS. GEOTEXTILE SEAMS SHALL BE OVERLAPPED AND CONTINUOUSLY HEAT SEAMED.
4. ALL GEOMEMBRANE SEAMS SHALL BE LAPPED AND SEAMED WITH HOT AIR, OR HOT WEDGE WELDING PROCEDURES. PRIOR TO SEAMING, MATERIAL SEAM SURFACES SHALL BE CLEANED IN ACCORDANCE WITH THE SPECIFICATIONS.
5. PRIOR TO CLEANING BASIN EXISTING GEOMEMBRANE LINER, THE SURFACE OF NEW OR EXISTING CONCRETE SHALL BE PREPARED TO RECEIVE THE LINER ATTACHMENT STRIP BY SANDBLASTING, WATER BLASTING, OR OTHER APPROVED METHOD UNTIL THE AREA IS FREE OF ALL LAITANCE, SCALE, MINERAL DEPOSITS, AND OTHER CONTAMINANTS. THE EXISTING CONCRETE SURFACE SHALL BE PREPARED BY LOCALIZED GRINDING OF THE CONCRETE SURFACE OR WITH THE APPLICATION OF AN EPOXY COATING SUCH AS SIKA TOP 122 MORTAR OR APPROVED EQUAL. THE FINISHED CONCRETE SURFACE SHALL BE A FLAT SURFACE WITH A TOLERANCE OF ± 1/32" IN ANY 6" LENGTH.

CONCRETE ANCHORS:

1. CONCRETE ADHESIVE ANCHORS SHALL BE A 2-COMPONENT PRE-PROPORTIONED ADHESIVE SYSTEM.
2. CONCRETE ADHESIVE ANCHORS SHALL BE HILTI HY-200 OR APPROVED EQUAL. WEDGE TYPE ANCHORS ARE NOT ALLOWED.
3. CONCRETE ADHESIVE ANCHOR COMPONENTS (STUDS, NUTS, AND WASHERS) SHALL BE TYPE 316 STAINLESS STEEL.
4. CONCRETE ADHESIVE ANCHORS NUTS SHALL BE TORQUED AS FOLLOWS:
 - 3/8" ANCHORS = 12 FT-LBS.
 - 1/2" ANCHORS = 20 FT-LBS.
5. CONCRETE ADHESIVE ANCHORS AT LINER UNDERWATER BATTEN BARS SHALL BE TIGHTENED MULTIPLE TIMES UNTIL RELAXATION OF LINER BATTEN ASSEMBLY HAS STABILIZED AND SPECIFIED TORQUE IS MAINTAINED. CONCRETE ANCHORS SHALL BE TIGHTENED, SIT FOR MINIMUM (2) DAYS, AND THEN RE-TIGHTENED. CONCRETE ANCHORS SHALL BE TIGHTENED A MINIMUM OF 3 TIMES. TIGHTENING PROCEDURE SHALL BE REPEATED UNTIL SPECIFIED TORQUE IS MAINTAINED.
6. CONCRETE ADHESIVE ANCHORS SHALL BE INSTALLED PER MANUFACTURER'S WRITTEN RECOMMENDATIONS AND APPLICABLE ICC EVALUATION REPORT.

TESTS AND SPECIAL INSPECTIONS

1. SPECIAL INSPECTION BY A REGISTERED BUILDING INSPECTOR SHALL BE REQUIRED FOR THE FOLLOWING TYPES OF WORK:
 - A. POST-INSTALLED CONCRETE ADHESIVE ANCHORS
2. INDEPENDENT THIRD PARTY LABORATORY TESTING SHALL BE REQUIRED FOR THE FOLLOWING TYPES OF WORK:
 - A. GEOMEMBRANE LINER SHOP SEAMS DESTRUCT SAMPLES
 - B. GEOMEMBRANE LINER FIELD SEAMS DESTRUCT SAMPLES
3. REFERENCE TECHNICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
4. CONTRACTOR SHALL PROVIDE REQUIRED SPECIAL INSPECTION SERVICES AND TESTING, UNLESS OTHERWISE NOTED.
5. TESTS, INSPECTIONS, AND OBSERVATIONS PERFORMED BY THE OWNER SHALL BE IN ADDITION TO CONTRACTOR REQUIRED QUALITY ASSURANCE, QUALITY CONTROL, TESTING, AND SPECIAL INSPECTIONS.

LEGEND

- CENTER LINE
- - - - - HIDDEN (BURIED)
- EXISTING
- ~~~~~ GEOTEXTILE
- ===== GEOMEMBRANE LINER
- ===== GEOMEMBRANE LINER LAP SEAM



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DATE

BY

REVISIONS

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OLIVENHAIN

Municipal Water District
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4S RANCH WRF

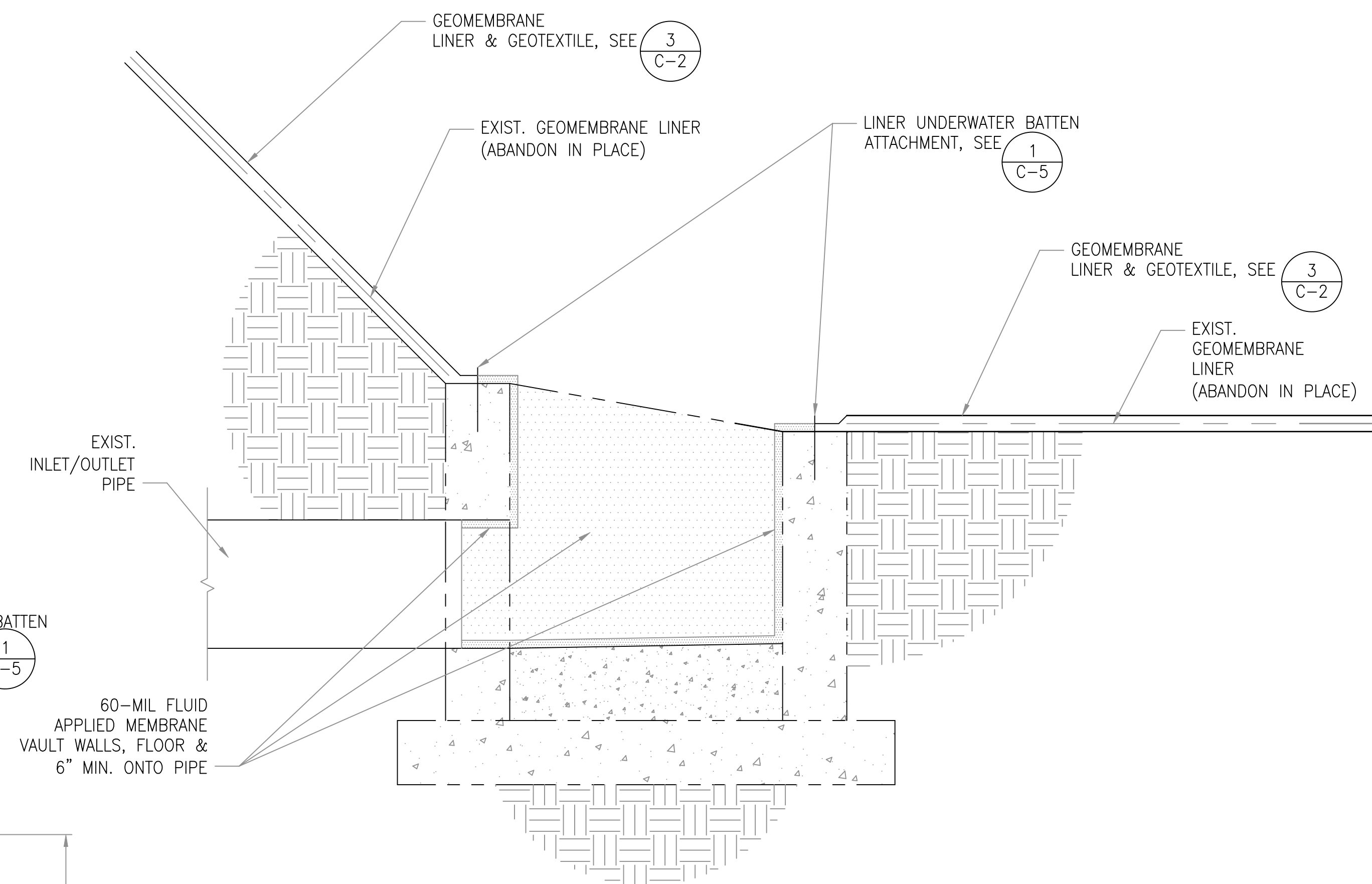
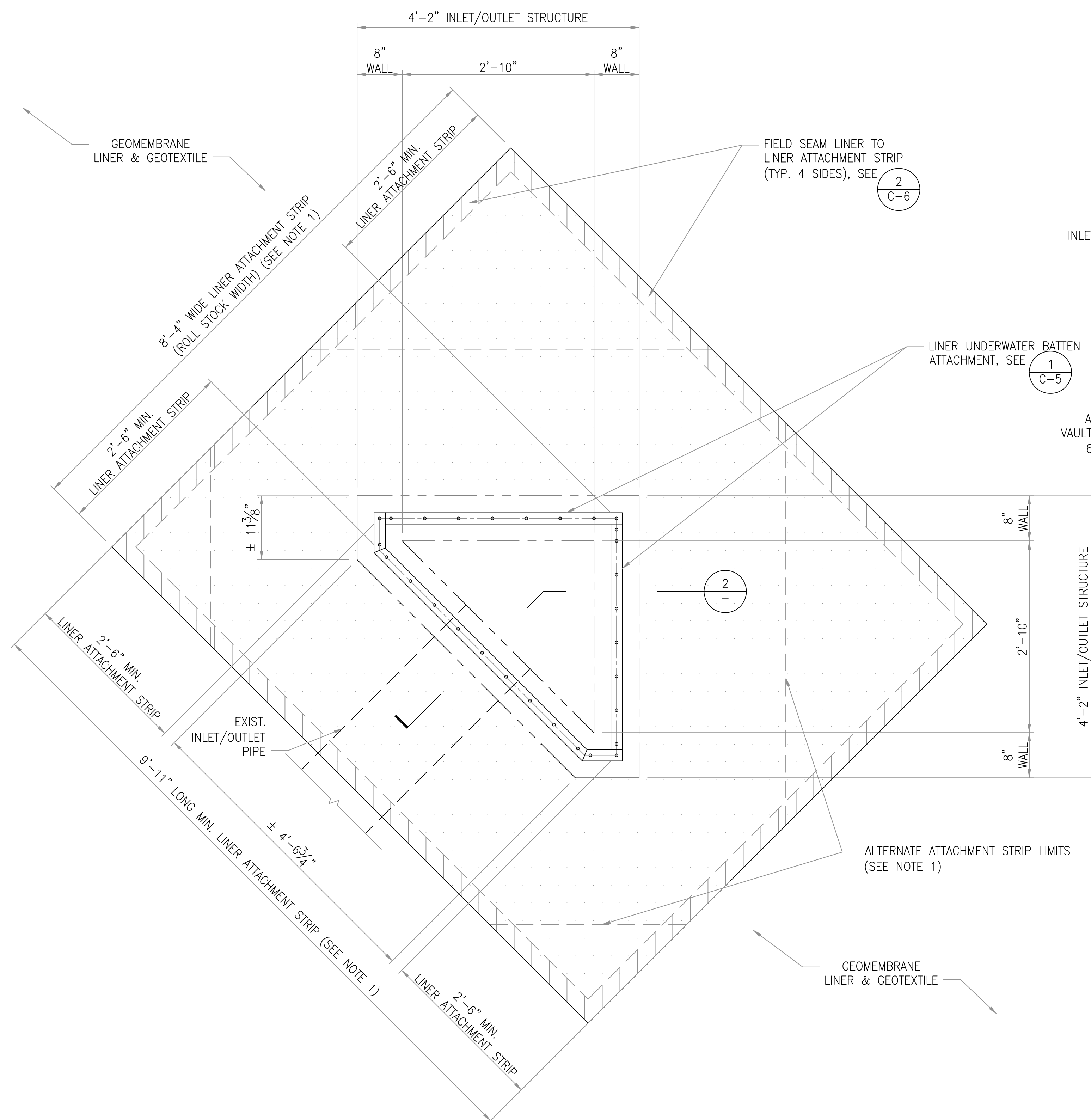
EQ BASIN RELINING PROJECT

LINER GENERAL NOTES

SHEET
3


DRAWING
C-1

ORIGINAL SCALE IN INCHES



NOTES

1. CONTRACTOR MAY PROPOSE ALTERNATE GEOMETRY FOR LINER ATTACHMENT STRIP, HOWEVER OUTSIDE EDGE SHALL BE MINIMUM 2'-6" FROM CONCRETE ANCHORS.
2. LINER ATTACHMENT STRIP MATERIAL SHALL BE SAME AS GEOMEMBRANE LINER MATERIAL.



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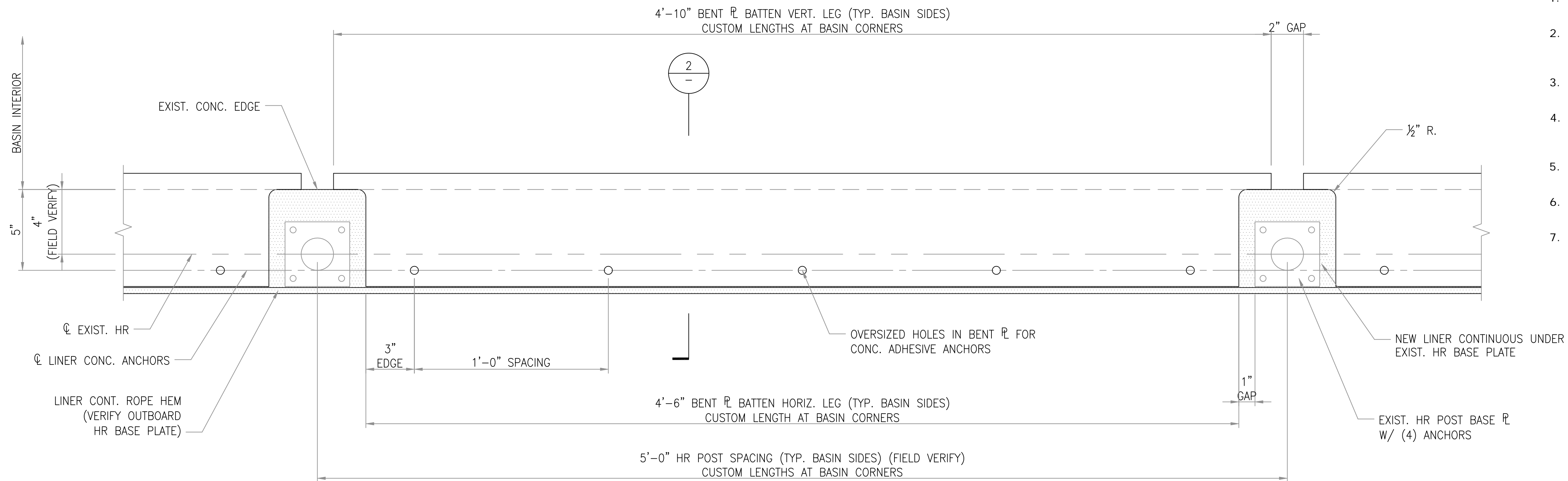
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45 RANCH WRT
EQ BASIN RELINING PROJECT
LINER INLET/OUTLET STRUCTURE

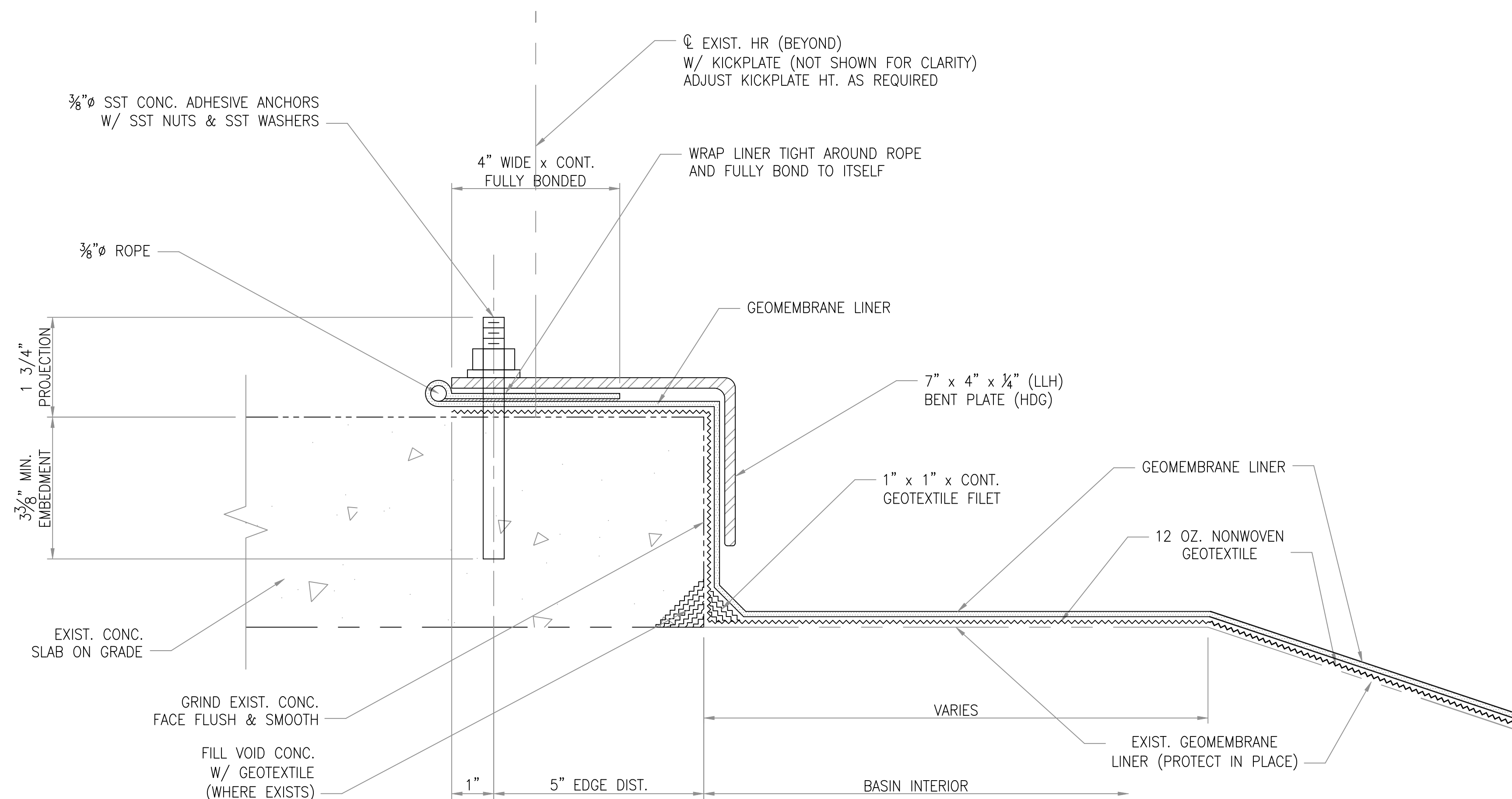
SHEET	DRAWING
5	C-3

ORIGINAL SCALE IN INCHES



PERIMETER ATTACHMENT PLAN

SCALE: 3"=1'-0"



PERIMETER ATTACHMENT SECTION

SCALE: 6"=1'-0"

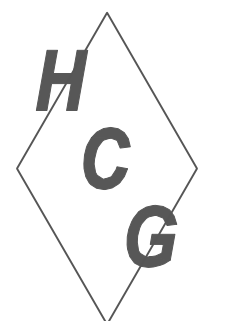


PERIMETER EXIST. 6" PVC PIPE

SCALE: NTS

NOTES

1. REMOVE & REINSTALL EXISTING HANDRAIL AS REQUIRED FOR LINER INSTALLATION.
2. CUSTOM LENGTH BENT PLATE BATTENS REQUIRED AT POND CORNERS. CONTRACTOR SHALL FIELD MEASURE FOR INSTALLATION.
3. EXISTING CONCRETE SLAB VERTICAL FACE AND CORNER EDGE SHALL BE GROUND FLAT AND SMOOTH.
4. VOIDS AT TOP OF SLOPE BETWEEN EXISTING GEOMEMBRANE LINER AND EXISTING CONCRETE SLAB SHALL BE FILLED WITH NONWOVEN GEOTEXTILE.
5. MISCELLANEOUS METAL CORNERS AND EDGES SHALL BE ROUNDED AND GROUND SMOOTH.
6. PROVIDE TEMPORARY BALLAST AT TOP OF SLOPE TO PREVENT LINER BRIDGING.
7. INSTALL BENT PLATE IMMEDIATELY AFTER LINER PANEL INSTALLATION AND ATTACHMENT TO ANCHORS TO PREVENT LINER BRIDGING.



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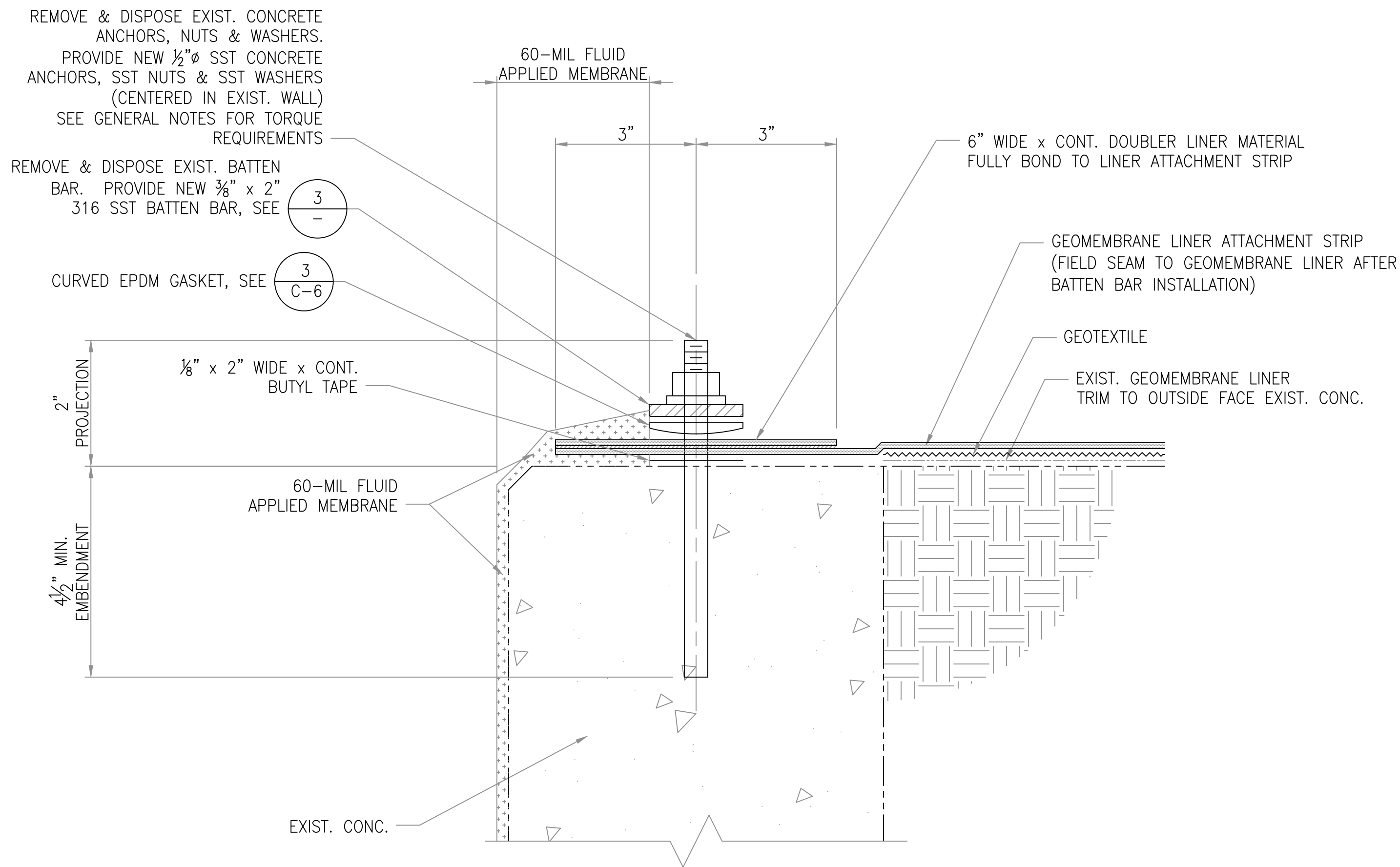
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4S RANCH WRF
EQ BASIN RELINING PROJECT
LINER PERIMETER ANCHORAGE

SHEET	DRAWING
6	C-4

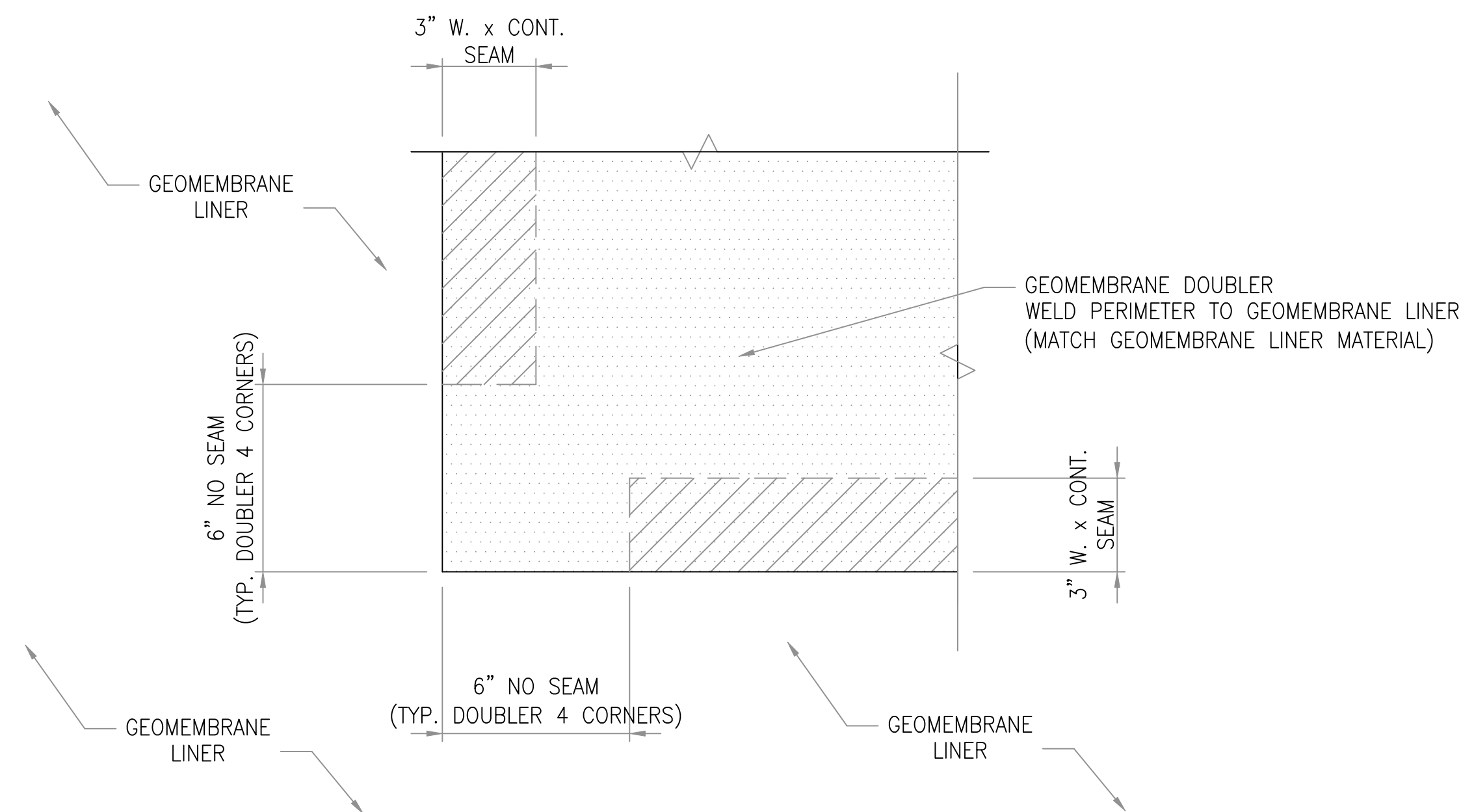
ORIGINAL SCALE IN INCHES



UNDERWATER BATTEN ATTACHMENT

SCALE: 6"=1'-0"

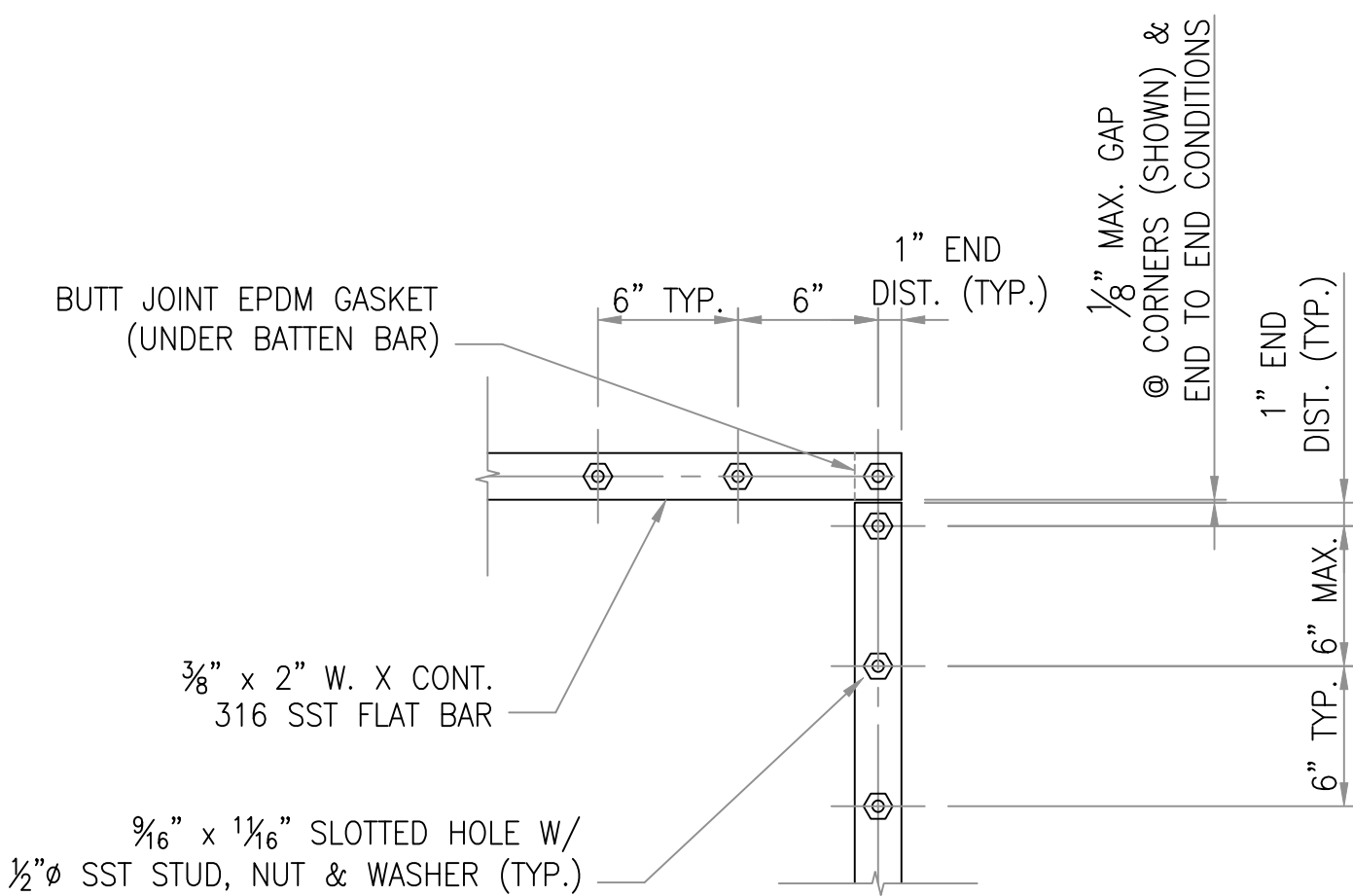
1



DOUBLER EDGE SEAM

SCALE: 3"=1'-0"

2



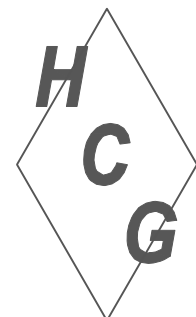
UNDERWATER BATTEN BAR

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

3

NOTES:

1. REMOVE & DISPOSE EXISTING CONCRETE ANCHORS, NUTS, WASHERS, AND BATTEN BARS. EXISTING STUDS SHALL BE GROUND FLUSH WITH CONCRETE OR REMOVED FROM CONCRETE AND RESULTING HOLE FILLED WITH NONSHRINK GROUT OR CONCRETE ANCHOR ADHESIVE.
2. STUD THREADS SHALL BE PROTECTED FROM FLUID APPLIED MEMBRANE.
3. FLUID APPLIED MEMBRANE SHALL BE APPLIED ONCE THE ATTACHMENT STRIP BATTEN BAR CONNECTION AND BOLT TORQUE IS COMPLETED. THE FLUID APPLIED MEMBRANE SHALL BE APPLIED ON CONCRETE, BATTEN BAR, AND LINER SURFACES.
4. LINER ATTACHMENT STRIP SHALL BE ATTACHED TO PREPARED CONCRETE SURFACE WITH CONTACT CEMENT WHILE CONTACT CEMENT IS STILL IN SEMI-PLASTIC STATE.
5. CONCRETE ANCHORS SHALL BE TORQUED PER REQUIREMENTS STATED IN CONCRETE ANCHORS GENERAL NOTES ON SHEET C-1.

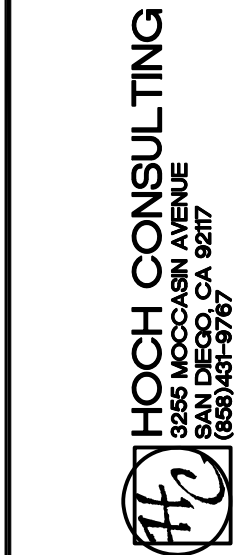


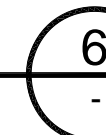
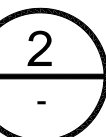
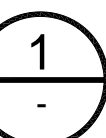
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4S RANCH WRF	EQ BASIN RELINING PROJECT								
LINER UNDERWATER ATTACHMENT									ORIGINAL SCALE IN INCHES
SHEET	7	DRAWING	C-5						





SHEET	DRAWING
8	C-6

ORIGINAL SCALE IN INCHES