

LAKE HAVASU CITY, ARIZONA

HAVASUPAI WASH #3

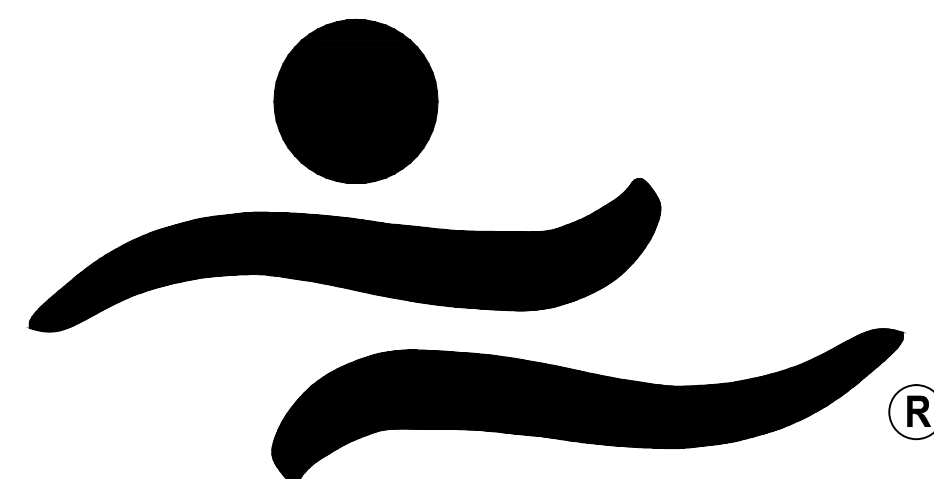
WASH STABILIZATION IMPROVEMENTS

BASIS OF HORIZONTAL CONTROL

BASIS OF HORIZONTAL CONTROL:
 JOB SETTINGS:
 HORIZONTAL DATUM – NAD83 (CORS96)
 PROJECTION – ARIZONA STATE PLANE WEST (SPC AZ WEST)
 LINEAR UNITS – US FOOT
 COORDINATE – GRID
 GEOID – GEOID 2003 ZONE 5

CITY BASE STATION:
 N: 1265542.33
 E: 528326.69
 ELEV: 773.83

US HARN POINT – HAVASU (NEAR AIRPORT)
 NGS ORDER A: STAINLESS STEEL ROD IN HANDHOLE MARKED
 HAVASU 92
 N: 1298017.10
 E: 515892.32
 ELEV: 696.75



LAKE HAVASU CITY

PREPARED BY:

Kimley»Horn

PROJECT ENGINEER

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CONTACT: ZACHARY SCHMIDT, P.E.

CITY COUNCIL

CAL SHEEHY
 DAVID LANE
 JIM DOLAN
 DONNA McCOY
 MICHELE LIN
 JENI COKE
 GORDON GROAT

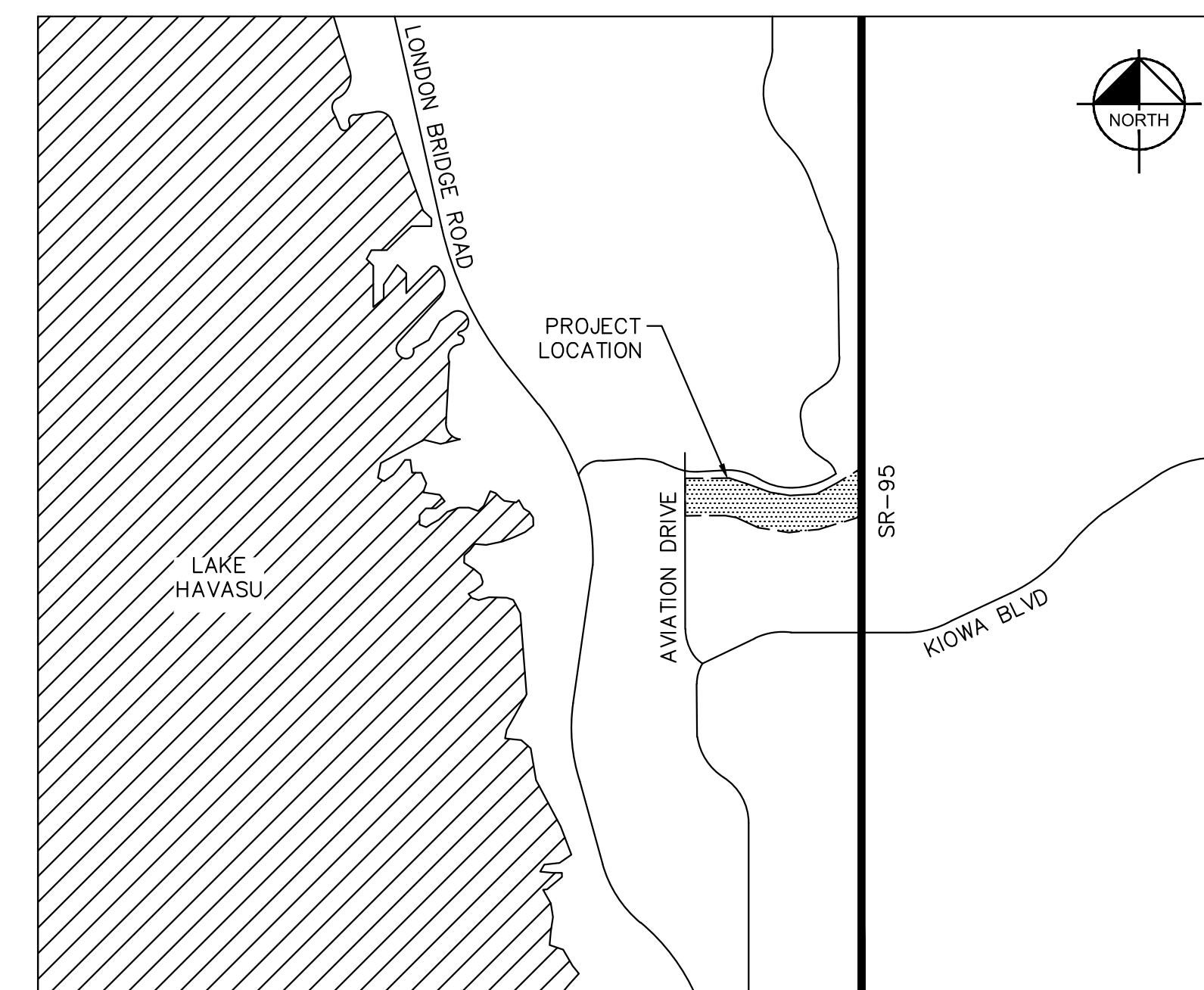
MAYOR
 VICE MAYOR
 COUNCIL MEMBER
 COUNCIL MEMBER
 COUNCIL MEMBER
 COUNCIL MEMBER

PROJECT MANAGER

Jeffrey Herb, PE

UTILITY CONTACTS

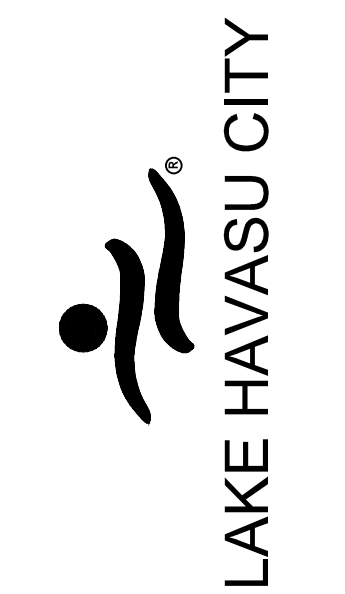
LAKE HAVASU CITY (WASTEWATER) (928) 855-3999
 LAKE HAVASU CITY (WATER) (928) 855-2618
 SUDDEN LINK (928) 855-9855
 FRONTIER COMMUNICATION (928) 453-0541
 UNISOURCE ENERGY SERVICES (GAS) (928) 226-2269
 UNISOURCE ENERGY SERVICES (ELECTRIC) (928) 505-7030



LOCATION MAP

SCALE: N.T.S.

SHEET LIST TABLE		
SHEET NUMBER	SHEET DESCRIPTION	SHEET TITLE
01	CV01	COVER SHEET
02	GN01	GENERAL NOTES
03	GC01	GEOMETRIC CONTROL SHEET
04	TS01	TYPICAL SECTIONS
05	PL01	WASH PLAN & PROFILE STA 99+00 – 105+00
06	PL02	WASH PLAN & PROFILE STA 105+00 – 112+00
07	PL03	WASH PLAN & PROFILE STA 112+00 – 119+00
08	PL04	WASH PLAN & PROFILE STA 119+00 – 125+00
09	CDT01	CHANNEL DETAILS
10	CDT02	CHANNEL DETAILS
11	CDT03	CHANNEL DETAILS
12	STR01	STRUCTURAL DETAILS



NO.	#	#	#	#
REVISIONS / SUBMISSIONS				
DATE				

LAKE HAVASU CITY
HAVASUPAI WASH #3
WASH STABILIZATION IMPROVEMENTS

Designed by: ZRS
 Drawn by: JGS
 Checked by: GSB
 Date: 11/2020
 Dwg. scale: N.T.S.

COVER SHEET



Sheet Number:

CV01
 Sheet 01 of 12

LAKE HAVASU GENERAL NOTES

A. GENERAL

- ALL STRUCTURES ARE DESIGNED TO ACT AS A STRUCTURAL UNIT UPON COMPLETION. CONTRACTOR SHALL DESIGN AND PROVIDE NECESSARY BRACING, TEMPORARY SUPPORTS, AND SHORING TO RESIST FORCES ON THE STRUCTURE DURING CONSTRUCTION.
- VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO STARTING WORK. NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- VERIFY LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO STARTING WORK.
- CONTRACTOR SHALL EXERCISE EXTREME CARE DURING THE EXCAVATION AND CONSTRUCTION FOR NEW STRUCTURE TO AVOID DAMAGE TO EXISTING STRUCTURES AND EXISTING UTILITIES. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL MEANS AND METHODS REQUIRED TO FACILITATE CONSTRUCTION OF THE WORK AND ENSURING THE SAFETY, STABILITY AND INTEGRITY OF ADJACENT STRUCTURES AND FACILITIES.
- THE ENGINEER SHALL BE NOTIFIED A MINIMUM OF 24 HOURS PRIOR TO BEGINNING ANY CONSTRUCTION.
- ANY WORK PERFORMED WITHOUT THE KNOWLEDGE AND APPROVAL BY THE ENGINEER AND/OR ALL WORK MATERIAL NOT IN CONFORMANCE WITH THE PLANS AND SPECIFICATIONS IS SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
- NO JOB WILL BE CONSIDERED COMPLETE UNTIL ALL CURBS, PAVEMENT AND SIDEWALKS (NEW AND EXISTING) HAVE BEEN SWEEPED CLEAN OF ALL DIRT AND DEBRIS.
- ALL QUANTITIES SHOWN ON PLANS ARE APPROXIMATE, ARE NOT VERIFIED BY THE ENGINEER, AND ARE FURNISHED SOLELY FOR THE CONTRACTOR'S CONVENIENCE. THEY DO NOT NECESSARILY CORRESPOND TO BID SCHEDULE ITEMS. PAYMENT WILL BE BASED ON BID SCHEDULE ITEMS. THE CONTRACTOR SHALL NOT BE RELIEVED OF HIS RESPONSIBILITY FOR INDEPENDENTLY ESTIMATING WORK QUANTITIES PRIOR TO BIDDING.
- BACKFILL COMPACTION SHALL BE PER MAG 301, UNLESS OTHERWISE NOTED.
- REMOVAL OF STRUCTURES AND OBSTRUCTIONS AS NECESSARY TO COMPLETE THE WORK, OTHER THAN SPECIALLY SCHEDULED IN THE BID, IS INCIDENTAL TO THE CONTRACT. NO SEPARATE MEASUREMENT OF PAYMENT FOR UNSCHEDULED REMOVAL ITEMS WILL BE MADE.
- CONSTRUCTION STAKING SHALL BE BY THE CONTRACTOR'S SURVEYOR WITH CONTROL PROVIDED BY THE DESIGN ENGINEER WHO STAMPED THE PLANS.
- THE LAKE HAVASU CITY MAY ORDER ANY OR ALL WORKMANSHIP AND MATERIALS TO BE TESTED ACCORDING TO APPLICABLE STANDARDS.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL REWORK AND/OR REMOVAL AND REPLACEMENT OF ALL MATERIALS AND/OR WORKMANSHIP REPRESENTED BY A FAILING TEST.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL COSTS OF TESTING AND QUALITY ASSURANCE/QUALITY CONTROL AS DELINEATED IN THE CITY'S PROJECT SPECIFICATIONS. THE COST OF TESTING IS INCIDENTAL TO EACH ITEM OF WORK. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE COST OF ANY CITY INSPECTION AND CITY INSPECTION TIME IF THE CONTRACTOR'S WORK IS BEING PERFORMED IN OVERTIME, AT NIGHT, OR ON WEEKENDS.
- APPROVAL OF A PORTION OF THE WORK IN PROGRESS DOES NOT GUARANTEE ITS FINAL ACCEPTANCE. TESTING AND EVALUATION MAY CONTINUE UNTIL WRITTEN FINAL ACCEPTANCE OF A COMPLETE AND WORKABLE UNIT.
- THE LAKE HAVASU CITY MAY SUSPEND THE WORK BY WRITTEN NOTICE WHEN, IN ITS JUDGEMENT, PROGRESS IS UNSATISFACTORY, WORK BEING DONE IS UNAUTHORIZED OR DEFECTIVE, WEATHER CONDITIONS ARE UNSUITABLE, OR THERE IS A DANGER TO THE PUBLIC HEALTH OR SAFETY.
- CLEARING AND GRUBBING IS CONSIDERED INCIDENTAL TO THE WORK UNLESS SEPARATELY IDENTIFIED IN THE BID SCHEDULE. NO SEPARATE MEASUREMENT OF OR PAYMENT FOR CLEARING, GRUBBING, AND TREE REMOVAL WILL BE MADE. THE SITE OF ALL EXCAVATION, EMBANKMENTS, AND FILLS SHALL FIRST BE CLEARED OF STUMPS, TRASH, WEEDS, RUBBISH, AND LOOSE BOULDERS WHICH SHALL BE REMOVED AND DISPOSED OF. THE CONTRACTOR MUST SATISFY HIMSELF REGARDING THE CHARACTER AND AMOUNT OF LOAM, CLAY, SAND, QUICKSAND, HARDPAN, GRAVEL, ROCK, WATER, AND ALL OTHER MATERIAL TO BE ENCOUNTERED AND WORK TO BE PERFORMED.
- THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ARE APPROXIMATE AND ARE BASED ON FIELD DATA AND MAP RECORDS. THE CONTRACTOR SHALL CONTACT 1-800-STAKE-IT PRIOR TO ANY CONSTRUCTION ACTIVITY TO VERIFY THE ACTUAL LOCATION OF ALL UTILITIES. THE CONTRACTOR SHALL DETERMINE WHICH UTILITIES DO NOT PARTICIPATE IN 1-800-STAKE-IT AND CONTACT THEM DIRECTLY TO VERIFY THE LOCATION OF THOSE UTILITIES. ANY DAMAGE TO EXISTING UTILITIES CAUSED BY CONTRACTOR'S OPERATION SHALL BE REPORTED TO THE UTILITY OWNER IMMEDIATELY AND REPAIRED OR REPLACED AT NO COST TO THE CITY. IN CASES WHEN THE EXISTING UTILITIES ARE NOT AS DEPICTED ON THE PLANS SOME MINOR DEVIATION TO THE PROPOSED ALIGNMENT MAY BE ALLOWED TO MAINTAIN MINIMUM SEPARATION DISTANCES BETWEEN UTILITIES. ANY PROPOSED TO MAINTAIN MINIMUM SEPARATION DISTANCES BETWEEN UTILITIES. ANY PROPOSED TO CHANGES TO THE ALIGNMENT MUST BE SUBMITTED TO THE CITY'S REPRESENTATIVE FOR REVIEW. NO CHANGES WILL BE ALLOWED WITHOUT PRIOR APPROVAL.
- THE CONTRACTOR SHALL LIMIT THE WORK AREA TO PUBLIC RIGHT-OF-WAY AND PERMANENT EASEMENTS AS SHOWN FOR CONSTRUCTION OF THE PROJECT. TEMPORARY CONSTRUCTION EASEMENTS EXIST AS SHOWN AND INDICATED IN THE PLANS.
- CONTRACTOR SHALL OBTAIN ANY ADDITIONAL TEMPORARY EASEMENTS OR USE AGREEMENTS THAT ARE DEEMED NECESSARY FOR CONSTRUCTION AT NO ADDITIONAL COST TO THE CITY. COPIES OF ALL CONTRACTOR OBTAINED EASEMENTS AND USE AGREEMENTS SHALL BE PROVIDED TO THE CITY'S REPRESENTATIVE PRIOR TO THE UTILIZATION OF THE SITE.
- THE CONTRACTOR SHALL GRADE AND RESURFACE ALL AREAS DISTURBED BY CONSTRUCTION, INCLUDING LANDSCAPE ROCK, IN ACCORDANCE WITH THE SPECIFICATIONS AND TO A CONDITION EQUAL TO, OR BETTER THAN, THE PRE-CONSTRUCTION CONDITION.
- THE CONTRACTOR SHALL PROTECT ALL CONCRETE STRUCTURES TO REMAIN. ALL CONCRETE REPLACEMENT SHALL BE FROM JOINT TO JOINT (WALLS, SIDEWALK) AND SHALL BE REPLACED WITH 4000 PSI CONCRETE. ALL DAMAGED CONCRETE PANELS MUST BE REPLACED AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL PROVIDE PROTECTION TO PREVENT UNDERMINING OR DAMAGING THE STRUCTURAL INTEGRITY OF ALL FENCES, RETAINING WALLS, STREET SIGNS, OTHER UTILITY POLES, OR OTHER PRIVATE OR PUBLIC IMPROVEMENTS WITHIN THE PROJECT AREA. THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE OWNING UTILITY AS NECESSARY TO PROVIDE TEMPORARY SUPPORT, OR PROTECTION DURING CONSTRUCTION WORK, AND SHALL NEATLY REMOVE AND PROMPTLY REPLACE NON UTILITY IMPROVEMENTS WITHOUT UNDUE DISRUPTION. THE COST OF ALL SUCH PROTECTION, REMOVAL, AND REPLACEMENT REQUIRED TO COMPLETE THE PROJECT SHALL BE SUBSIDIARY TO OTHER BID ITEMS.
- THE CONTRACTOR SHALL REMOVE ALL FENCING, ASPHALT AND CONCRETE ROADS AND DRIVEWAYS, CURB AND GUTTER, RIP-RAP, DRAINAGE CULVERTS AND ASSOCIATED APPURTENANCES AS REQUIRED FOR CONSTRUCTION PURPOSES. ALL ITEMS DAMAGED OR REMOVED SHALL BE RESTORED IN ACCORDANCE WITH THE SPECIFICATION TO A CONDITION EQUAL TO, OR BETTER THAN, THEIR CONDITION PRIOR TO THE START OF THE PROJECT. ITEMS OF WORK NOT SPECIFICALLY INCLUDED IN THE MEASUREMENTS AND PAYMENT SECTION OF THE SPECIFICATIONS SHALL BE CONSIDERED SUBSIDIARY TO OTHER BID ITEMS AND SHALL NOT BE PAID FOR SEPARATELY.
- IT IS NOT THE INTENTION OF THE SPECIFICATIONS TO SUPERSSEDE ANY FEDERAL, STATE OR LOCAL LAWS, REGULATIONS AND/OR ORDINANCES; THEY SHALL GOVERN IN ALL INSTANCES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SHOW A GOOD FAITH EFFORT AND TO PROTECT ALL EXISTING UTILITY TIES AND STRUCTURES AND TO ABIDE BY ALL FEDERAL, STATE AND LOCAL LAWS AND ORDINANCES IN THIS RESPECT.
- THE CONTRACTOR SHALL PROTECT ALL EXISTING IMPROVEMENTS ON PRIVATE PROPERTY. ALL ITEMS DAMAGED OR REMOVED SHALL BE RESTORED IN ACCORDANCE WITH THE SPECIFICATION TO A CONDITION EQUAL TO, OR BETTER THAN, THEIR CONDITION PRIOR TO THE START OF THE PROJECT.
- PROPERTY LINES SHOWN ON DRAWINGS ARE APPROXIMATE.

- ALL CONSTRUCTION SHALL CONFORM TO THE LATEST MARICOPA ASSOCIATION OF GOVERNMENTS, UNIFORM STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION (MAG), OTHER CITY'S, AND ADOT DETAILS (AS CITED IN PROJECT PLANS AND SPECIFICATIONS). LAKE HAVASU CITY STANDARD DETAILS WILL CONTINUE TO APPLY WHERE SUCH DETAILS WERE NOT ADOPTED OR INCLUDED BY MAG. ALTERNATE DETAILS AND SPECIFICATIONS MAY BE SUBMITTED FOR REVIEW AND ACCEPTANCE BY THE ENGINEERING DIVISION. IF ACCEPTED, ALTERNATE DETAILS WILL BE SHOWN AS PART OF THE APPROVED PLANS/DETAIL SHEETS.
- THIS SET OF PLANS HAS BEEN REVIEWED FOR COMPLIANCE WITH CITY REQUIREMENTS PRIOR TO ISSUANCE OF CONSTRUCTION PERMITS. HOWEVER, SUCH REVIEW SHALL NOT PREVENT THE CITY ENGINEER FROM REQUIRING CORRECTION OF ERRORS OR OMISSIONS IN PLANS FOUND TO BE IN VIOLATION OF ANY LAW OR ORDINANCE.
- APPROVAL BY THE CITY ENGINEER MEANS FOR GENERAL LAYOUT IN RIGHT-OF-WAY ONLY. CONSTRUCTION PERMITS SHALL BE OBTAINED WITHIN THIS PERIOD OR THE PLANS SHALL BE RESUBMITTED FOR APPROVAL. WORK SHALL ALSO BE CONTINUOUSLY PURSUED IN ORDER TO MAINTAIN A VALID PLAN APPROVAL AND PERMIT. APPROVAL IS ONLY FOR WORK WITHIN THE JURISDICTION OF LAKE HAVASU CITY.
- AN APPROVED SET OF PLANS MUST BE AVAILABLE ON THE JOB SITE AT ALL TIMES. THE CONTRACTOR'S REPRESENTATIVE (CAPABLE OF COMMUNICATING WITH THE CITY'S REPRESENTATIVES) SHALL BE ON THE JOB AT ALL TIMES THE WORK IS BEING PURSUED.
- THE CONTRACTOR IS RESPONSIBLE TO PROVIDE EMERGENCY TELEPHONE NUMBERS TO LAKE HAVASU CITY AT TIME OF ISSUANCE OF OFF-SITE/ON-SITE PERMITS AND HAVE PERSONNEL AVAILABLE 24-HOURS A DAY TO RESPOND TO EMERGENCIES. IF THE CITY IS REQUIRED TO RESPOND AND MAKE EMERGENCY REPAIRS ON BEHALF OF THE CONTRACTOR, THE CONTRACTOR IS RESPONSIBLE TO REIMBURSE THE CITY FOR ALL COSTS INCURRED.
- THE CONTRACTOR SHALL TAKE APPROPRIATE STEPS TO PREVENT EROSION AND DEPOSITION OF SEDIMENTS INTO WATER COURSES. THE CONTRACTOR SHALL SUBMIT AN EROSION CONTROL PLAN FOR APPROVAL, PRIOR TO THE START OF ANY EXCAVATION. ALL DRAINAGE PROTECTIVE DEVICES SUCH AS SWALES, INTERCEPTION DITCHES, PIPES, PROTECTIVE BERMS, CONCRETE CHANNELS OR OTHER MEASURES DESIGNED TO PROTECT IMPROVEMENTS, WHETHER EXISTING OR PROPOSED, FROM RUNOFF OR DAMAGE FROM STORM WATER, MUST BE CONSTRUCTED PRIOR TO THE CONSTRUCTION OF ANY IMPROVEMENTS. ALL EROSION AND SEDIMENT CONTROL WORK SHALL BE INCIDENTAL TO OTHER PAY ITEMS.
- TRAFFIC CONTROL SHALL CONFORM WITH THE TRAFFIC BARRICADE MANUAL AND MUTCD GUIDELINES. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN PER THE TRAFFIC BARRICADE MANUAL. BARRICADES MUST BE CONTINUALLY MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. A TRAFFIC CONTROL PLAN (TCP) SHALL BE SUBMITTED TO THE ENGINEERING DIVISION AND ACCEPTED A MINIMUM OF 24-HOURS PRIOR TO CONSTRUCTION. AN ACCEPTED TCP WILL BE STAMPED AND A COPY RETURNED TO THE CONTRACTOR. A COPY OF THE ACCEPTED PLAN MUST REMAIN ON THE JOB SITE AT ALL TIMES.
- ALL CONTRACTORS ARE RESPONSIBLE TO OBTAIN AN ARIZONA POLLUTANT DISCHARGE ELIMINATION SYSTEM (AZPDES) PERMIT IN ACCORDANCE WITH FEDERAL AND STATE REGULATIONS, INCLUDING NOTICE OF INTENT (NOI), NOTICE OF TERMINATION, AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP). A COPY OF THE NOI AND SWPPP SHALL BE AVAILABLE ON THE JOB SITE AT ALL TIMES.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ANY AND ALL OTHER PERMITS AND MEET ANY REQUIREMENTS SET FORTH BY OTHER AGENCIES OR UTILITIES, WHICH HAVE JURISDICTION, AT THE CONTRACTORS EXPENSE, INCLUDING OSHA. CONTRACTOR SHALL MEET OSHA STANDARDS FOR TRENCH SAFETY.
- FIRE ACCESS TO BE MAINTAINED DURING ALL PHASES OF CONSTRUCTION AS REQUIRED BY LAKE HAVASU CITY FIRE DEPARTMENT.
- THE CONTRACTOR SHALL KEEP SUITABLE EQUIPMENT ON HAND AT THE JOBSITE FOR MAINTENANCE DUST CONTROL, AND SHALL CONTROL DUST AS DIRECTED BY THE APPROPRIATE AGENCIES.
- ALL EXISTING FLOW LINES SHOWN ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY CONTRACTOR.
- PROPERTY LINES SHOWN ON DRAWINGS ARE APPROXIMATE.
- THE CONTRACTOR SHALL GRADE AND RESURFACE ALL AREAS DISTURBED BY CONSTRUCTION, INCLUDING LANDSCAPE ROCK, IN ACCORDANCE WITH THE SPECIFICATIONS AND TO A CONDITION EQUAL TO, OR BETTER THAN, THE PRE-CONSTRUCTION CONDITION.
- ANY ROCK ENCOUNTERED DURING EXCAVATION SHALL BE REMOVED AT NO ADDITIONAL COST TO THE CITY. ROCK EXCAVATION COST SHALL BE INCIDENTAL TO OTHER ITEMS OF WORK.
- ANY SHORING REQUIRED SHALL BE CONSIDERED INCIDENTAL TO OTHER ITEMS OF WORK.
- COORDINATE SHUTDOWN AND SEQUENCING REQUIREMENTS WITH OWNER 48-HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR MUST HAVE AN APPROVED SEQUENCING PLAN PRIOR TO ANY CONSTRUCTION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING STAGING AREAS FOR THEIR WORK.
- CONTRACTOR SHALL FIELD VERIFY AND REPLACE ALL PROPERTY DRAIN PIPES (6" OR SMALLER, IN KIND) TO BE LAID OVER THE FINISHED GRADE SLOPE & EXTENDED 12" BEYOND TOP OF BANK PROTECTION AS SPECIFIED ON THE TECHNICAL SPECIFICATIONS (ALLOWANCE).

EARTHWORK QUANTITIES			
CUT (CY)	FILL (CY)	NET (CY)	WASTE
22,700	22,300	400	

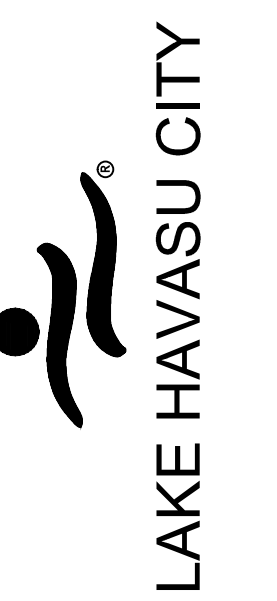
- EARTHWORK QUANTITIES ARE ESTIMATED VOLUMES USING NO CLEAR & GRUB LOSS, SHRINKAGE, COMPACTION, STRUCTURE ELEVATION, BULKING OR TOP SOIL HARVESTING FACTORS & SHALL BE FOR ESTIMATING & INFORMATION PURPOSES ONLY. THE CONTRACTOR SHALL PREPARE HIS OWN EARTHWORK ANALYSIS FOR BIDDING PURPOSES.
- FILL QUANTITY INCLUDES ESTIMATE OF SOIL VOLUME NECESSARY FOR CSA CONSTRUCTION.
- FILL QUANTITY DOES NOT ACCOUNT FOR SUITABILITY OF IN SITU MATERIAL, NOR DOES IT ACCOUNT FOR SLURRY BACKFILL REQUIRED PER PROJECT PLANS.
- CUT QUANTITY INCLUDES EXCAVATION VOLUME NECESSARY FOR CHANNEL GRADING AND CSA CONSTRUCTION.

LEGEND

- PROPERTY LINE, EXISTING R/W
- EXISTING EASEMENT
- EXISTING OVERHEAD ELECTRIC
- EXISTING WALL
- EXISTING UTILITY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED WASH BANK
- CUT LINE
- FILL LINE
- PROPOSED CONCRETE GRADE CONTROL STRUCTURE
- PROPOSED CONCRETE SLURRY
- PROPOSED RIPRAP
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING WATER METER
- EXISTING SIGN
- EXISTING STORM DRAIN MANHOLE
- EXISTING CATCH BASIN
- EXISTING GUY WIRE
- EXISTING UTILITY POLE

ABBREVIATIONS

- | | |
|------|--|
| AISC | AMERICAN INSTITUTE OF STEEL CONSTRUCTION |
| ASLD | ARIZONA STATE LAND DEPARTMENT |
| ASTM | AMERICAN SOCIETY FOR TESTING MATERIALS |
| BF | BACK FACE |
| BLDG | BUILDING |
| CLR | CLEAR |
| CONC | CONCRETE |
| CSA | CEMENT STABILIZED ALLUVIUM |
| CT | CONSTRUCTION |
| DIA | DIAMETER |
| DWG | DRAWING |
| E | EAST, EASTING |
| ELEV | ELEVATION |
| ELC | ELECTRIC |
| ESMT | EASEMENT |
| EXST | EXISTING |
| FF | FRONT FACE |
| FG | FINISH GRADE ELEVATION |
| FT | FOOT OR FEET |
| GND | GROUND |
| HW | HIGH WATER |
| JT | JOINT |
| LF | LINEAR FEET |
| LOL | LAYOUT LINE |
| LS | LUMP SUM |
| MAG | MARICOPA ASSOCIATION OF GOVERNMENTS |
| MH | MANHOLE |
| N | NORTH, NORTHING |
| NIC | NOT-IN-CONTRACT |
| NPI | NON-PAY ITEM |
| NTS | NOT TO SCALE |
| OC | ON CENTER |
| PIP | PROTECT IN PLACE |
| R | PROPERTY LINE |
| PROP | PROPOSED |
| S/W | SIDEWALK |
| SF | SQUARE FOOT |
| SPA | SPACING |
| SHT | SHEET |
| SPEC | SPECIFICATIONS |
| SS | SANITARY SEWER |
| STD | STANDARD |
| T/F | TOP OF FOOTING |
| T/W | TOP OF WALL |

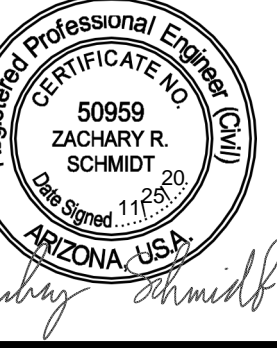


NO.	REVISIONS / SUBMISSIONS	DATE
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LAKE HAVASU CITY
HAVASU PAI WASH #3
WASH STABILIZATION IMPROVEMENTS

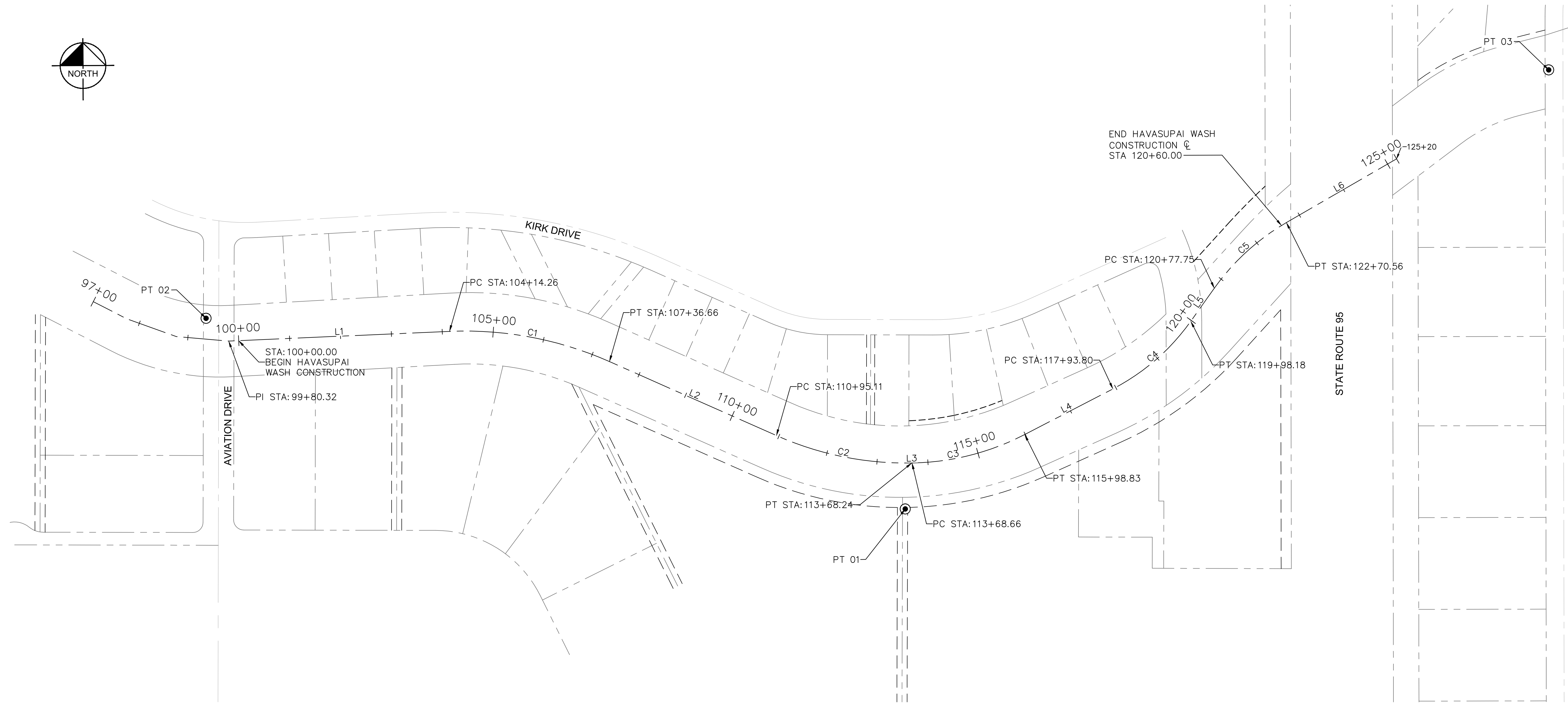
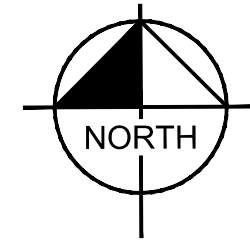
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 Checked by: GSB
 Date: 11/2020
 Dwg. scale: N.T.S.

GENERAL NOTES



Sheet Number:
GN01
 02
 Sheet of 12

K:\PHX_WaterResources\191245009 - Havasupai Wash - CADD\Sheets\191245009_GC01.dwg 11/25/2020 1:19 PM RITCHIE, EDGAR



LINE TABLE		
LINE	LENGTH	BEARING
L1	433.93	N87°40'52.88"E
L2	358.45	S65°55'48.00"E
L3	0.42	N89°13'46.99"E
L4	194.97	N62°51'17.89"E
L5	79.57	N35°37'19.45"E
L6	249.79	N60°10'16.21"E

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C1	700.00'	322.40'	S79°07'28"E	319.56'	26°23'19"	164.11'
C2	630.00'	273.13'	S78°21'01"E	271.00'	24°50'25"	138.75'
C3	500.00'	230.16'	N76°02'32"E	228.14'	26°22'29"	117.16'
C4	430.00'	204.38'	N49°14'19"E	202.46'	27°13'58"	104.16'
C5	450.00'	192.81'	N47°53'48"E	191.34'	24°32'57"	97.91'

BASIS OF BEARING

BEARINGS SHOWN HEREON ARE BASED UPON U.S. STATE PLANE NAD83 COORDINATE SYSTEM ARIZONA STATE PLANE COORDINATE ZONE WEST, GEOID 2003 ZONE 5.

BEARING AND DISTANCE BETWEEN CONTROL POINT 02 AND 03: N79°43'02"E 2680.26'

SURVEY CONTROL POINTS				
POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
01	1276425.2699	518545.8486	585.22	8" REBAR SET 25'± WEST OF CURB
02	1276803.8555	517174.6301	528.41	PK NAIL SET IN WAS STRUCTURE
03	1277282.2933	519811.8397	620.44	PK NAIL SET IN SIDEWALK



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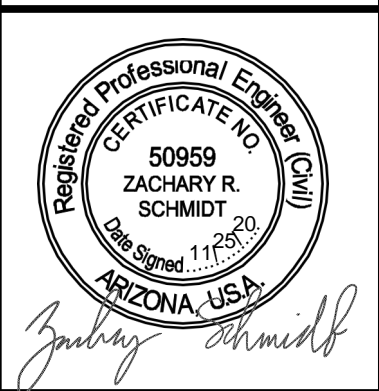
Sheet Number:
GC01
 Sheet 03 of 12

LAKE HAVASU CITY
 HAVASUPAI WASH #3
 WASH STABILIZATION IMPROVEMENTS

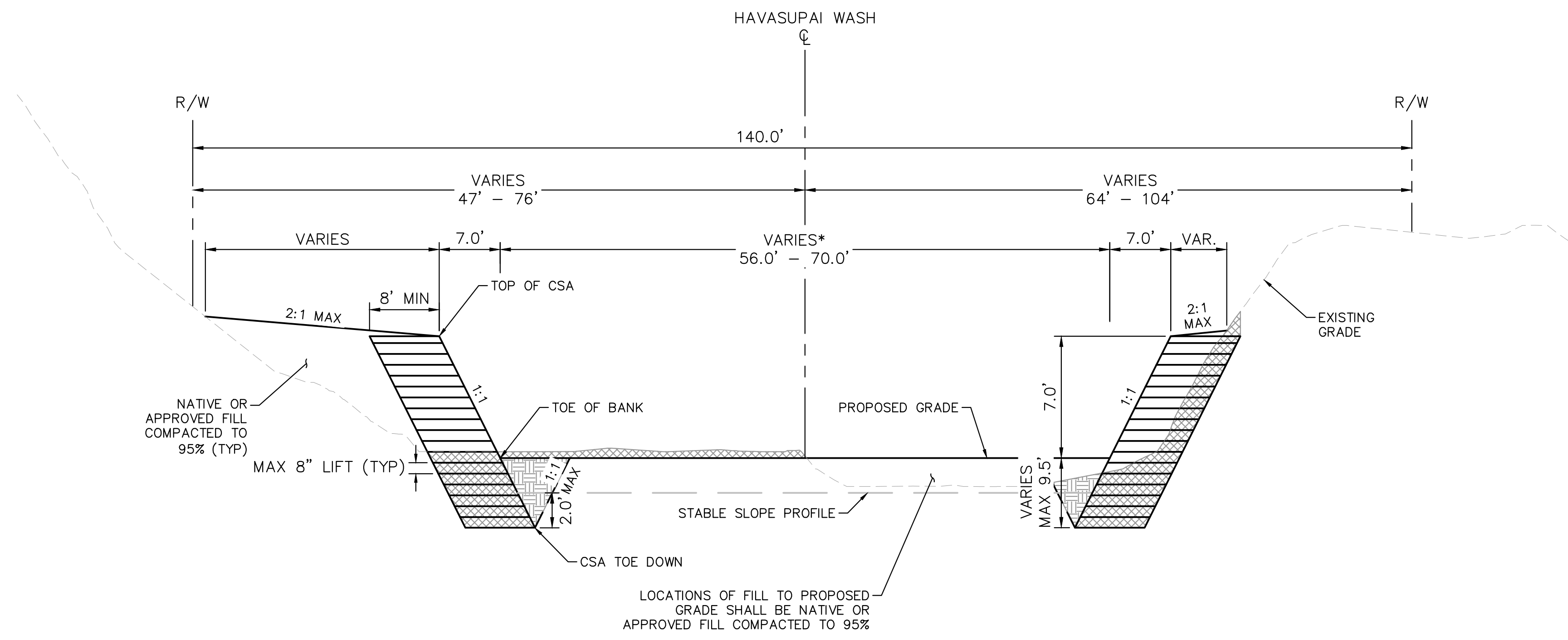
NO.	REVISIONS / SUBMISSIONS	DATE
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#	-	-

Designed by: ZRS
 Drawn by: JCS
 Checked by: GSB
 Date: 11/2020
 Dwg scale: 1" = 100'

GEOMETRIC CONTROL SHEET



K:\PHX_WaterResources\191245009 - Havasupai Wash - #3\CADD\Sheets\191245009_TS01.dwg 11/25/2020 1:19 PM RITCHIE, EDCAR

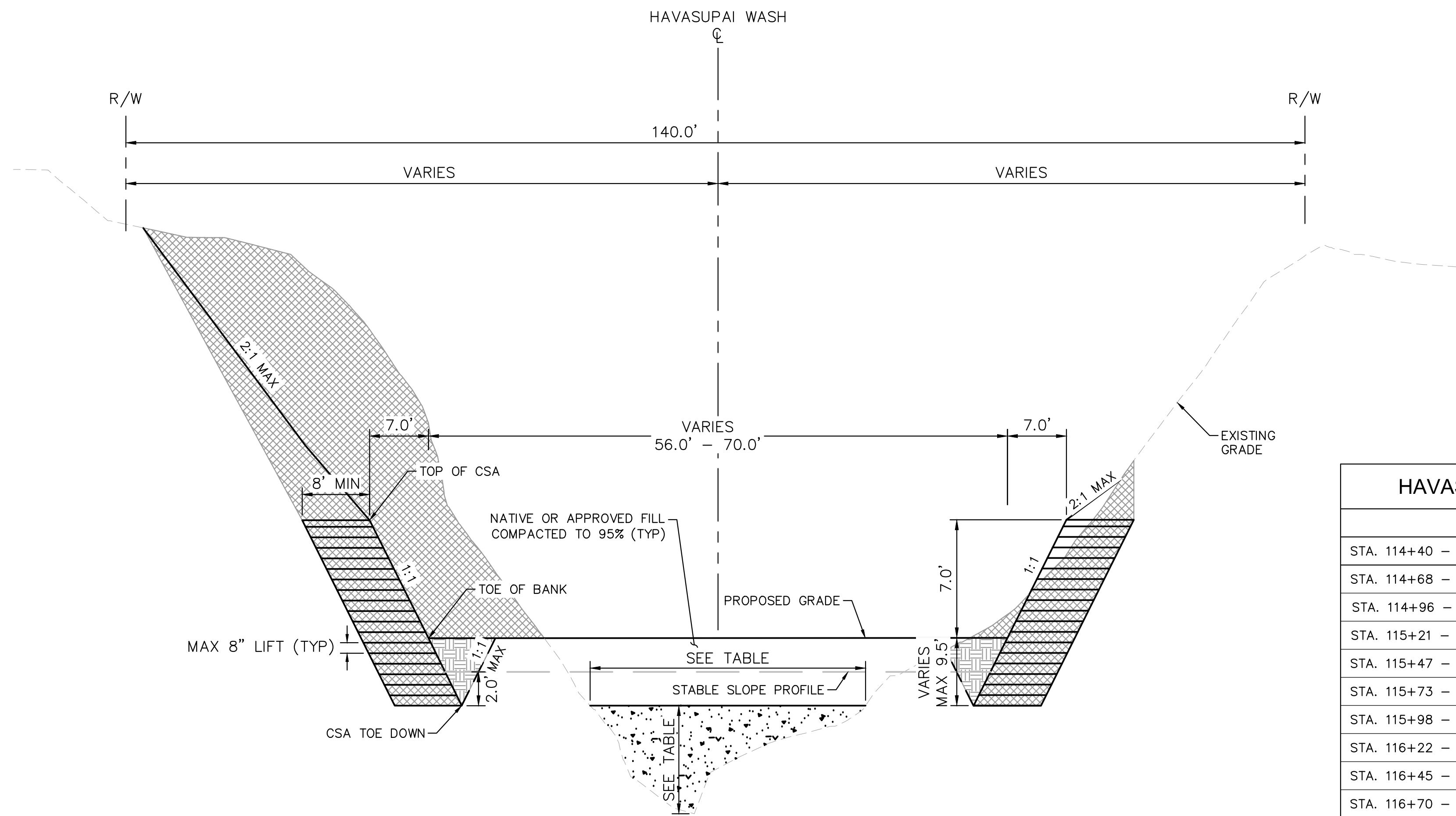


TYPICAL SECTION 1
NOT TO SCALE

*NOTE 70.0' STA 100+00.00 to 113+68.66
56.0' STA 115+98.83 to 122+70.56

LEGEND

- EXCAVATION LIMIT
- OVER EXCAVATION SLOPE DURING CONSTRUCTION (REPLACE W/ NATIVE BED MATERIAL TO TOE OF BANK AND COMPACT TO 95%), INCLUDED IN EXCAVATION LIMIT
- CSA BANK PROTECTION
- FLOWABLE FILL TO BOTTOM OF CSA TOE-DOWN. REQUIREMENTS PER LHC SPECIFICATIONS SECTION 2310



TYPICAL SECTION 2
113+92 to 116+30
NOT TO SCALE

HAVASUPAI WASH AVERAGE WIDTHS AND DEPTHS		
	AVERAGE TOP WIDTH	AVERAGE DEPTH TO BOTTOM
STA. 114+40 - STA. 114+68	24'	7.25'
STA. 114+68 - STA. 114+96	21'	7.5'
STA. 114+96 - STA. 115+21	18'	7.5'
STA. 115+21 - STA. 115+47	12'	6.3'
STA. 115+47 - STA. 115+73	9'	5'
STA. 115+73 - STA. 115+98	11'	5'
STA. 115+98 - STA. 116+22	14'	5'
STA. 116+22 - STA. 116+45	15'	5.5'
STA. 116+45 - STA. 116+70	13'	5.5'
STA. 116+70 - STA. 116+94	9'	4'



NO.	REVISIONS / SUBMISSIONS	DATE
#		
#		
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LAKE HAVASU CITY
HAVASUPAI WASH #3
WASH STABILIZATION IMPROVEMENTS

Designed by: ZRS
Drawn by: JCS
Checked by: GSB
Date: 11/2020
Dwg scale: N.T.S.

TYPICAL SECTIONS

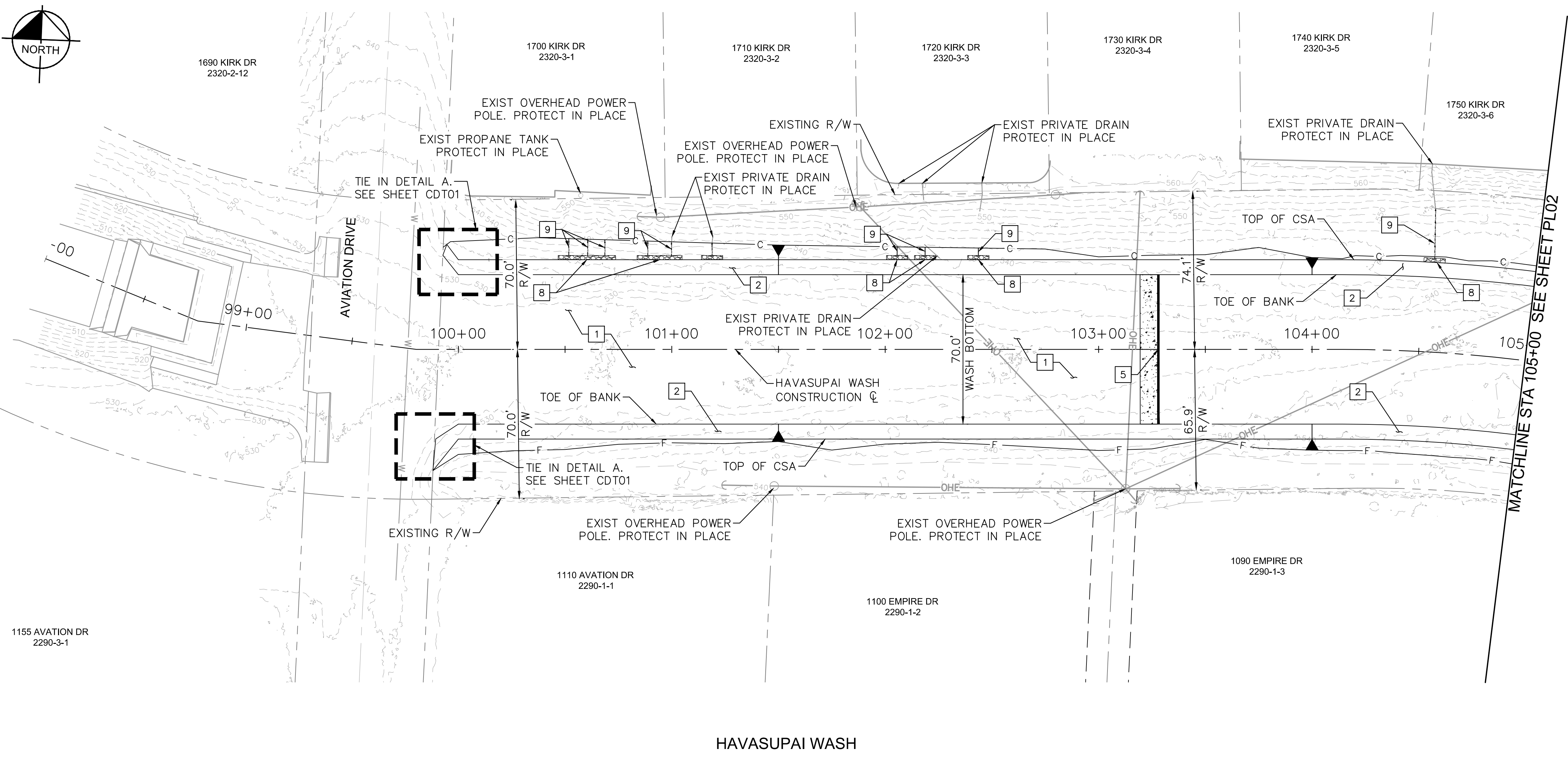
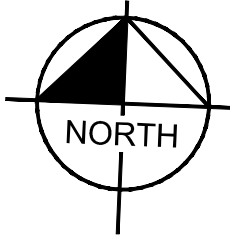
ARIZONA BLUE STAKE
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1-800-STAKE-IT
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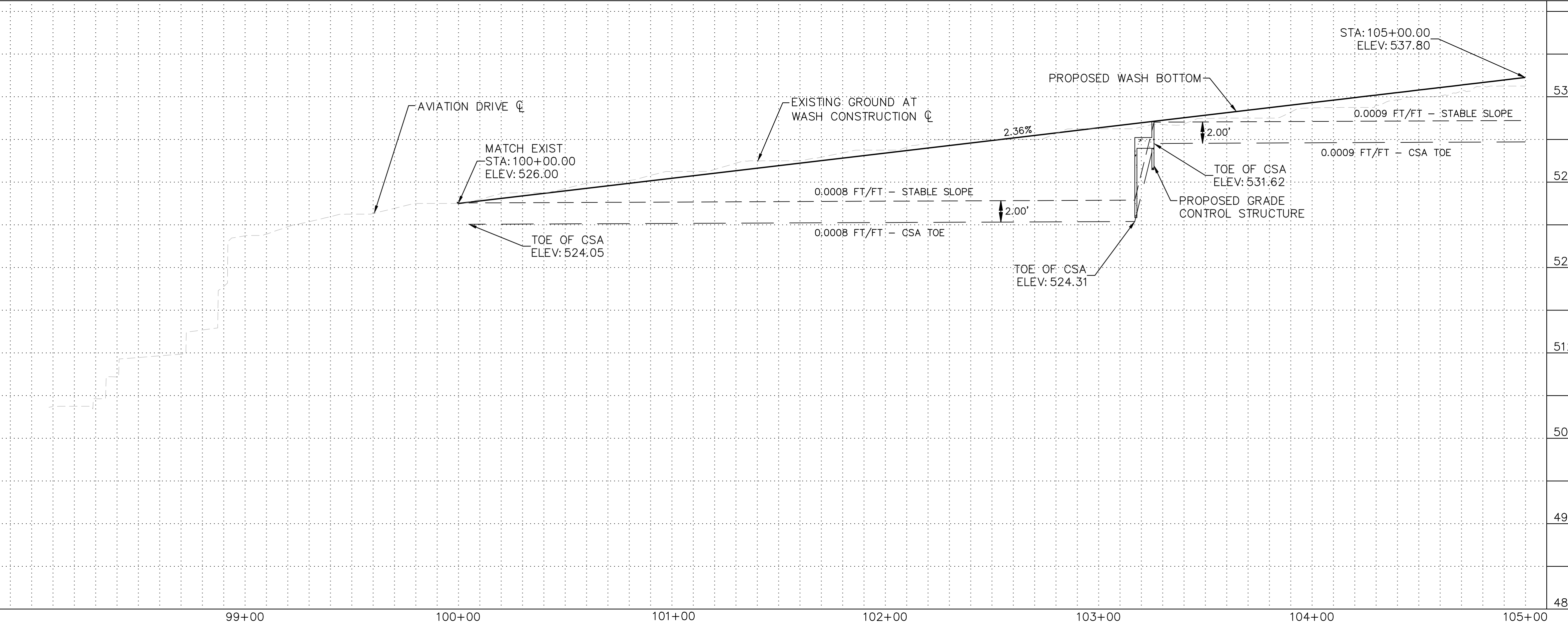
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Sheet Number:
TS01
Sheet 04 of 12



CONSTRUCTION NOTES			
NO	DESCRIPTION	QTY	UNIT
1	CHANNEL EXCAVATION PER TYPICAL SECTION, SEE SHEET TS01	7779	CY
2	CSA BANK PROTECTION PER TYPICAL SECTION, SEE SHEET TS01	3688	CY
5	CONCRETE GRADE CONTROL STRUCTURE, SEE SHEET STR01	1	EA
8	DUMPED RIPRAP, D50=12", 2' THICK	20	SY
9	SWALE PER DETAIL F SEE SHEET CDT03	NPI	NPI

LAKE HAVASU CITY



NO.	#	#	#	#
REVISIONS / SUBMISSIONS	-	-	-	-
DATE	-	-	-	-

LAKE HAVASU CITY
HAVASUPAI WASH #3
WASH STABILIZATION IMPROVEMENTS

SHEET NOTES

- FINE CHANNEL GRADING TO INCLUDE IMPORTED MATERIAL. REFER TO SHEET GN01 FOR EARTHWORK SUMMARY.
- USE OF VIBRATORY EQUIPMENT NEAR EXISTING PRIVATE WALLS TO BE LIMITED.

Designed by: ZRS
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 Dwg. scale: 1" = 30'

WASH PLAN AND PROFILE
99+00 TO 105+00

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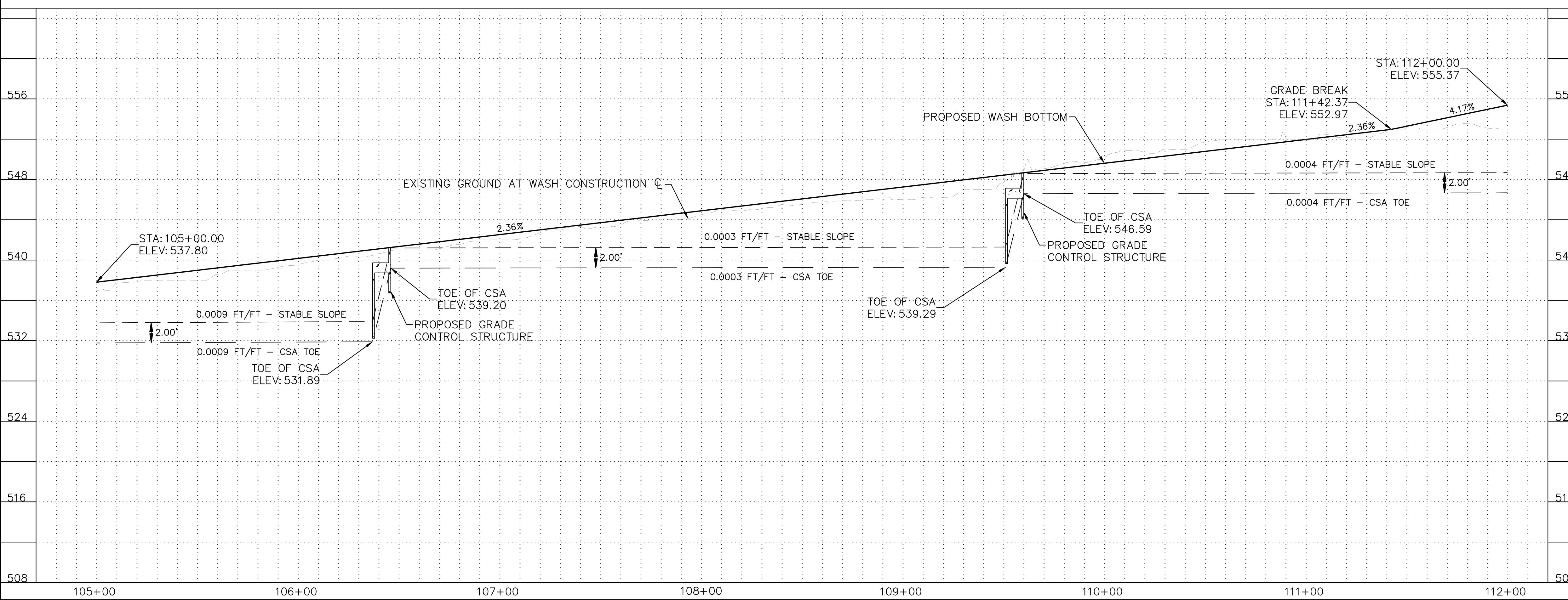
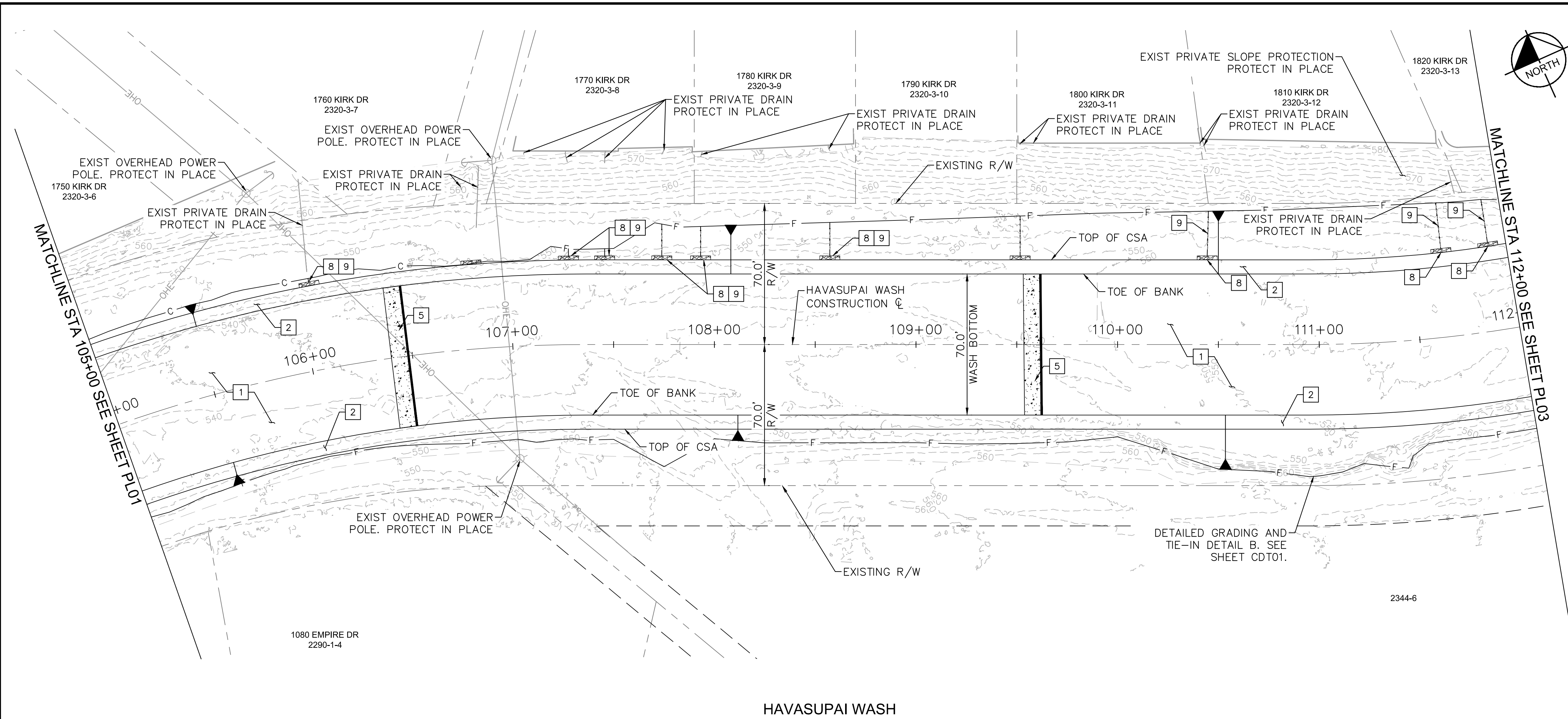
Professional Engineer
 CERTIFICATE NO. 50959
 ZACHARY R. SCHMIDT
 ARIZONA, USA

Sheet Number:
PL01

Sheet 05 of 12

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CONSTRUCTION NOTES			
NO	DESCRIPTION	QTY	UNIT
1	CHANNEL EXCAVATION PER TYPICAL SECTION, SEE SHEET TS01	6341	CY
2	CSA BANK PROTECTION PER TYPICAL SECTION, SEE SHEET TS01	5143	CY
5	CONCRETE GRADE CONTROL STRUCTURE PER DETAIL, SEE SHEET STR01	2	EA
8	DUMPED RIPRAP, D50=12", 2' THICK	20	SY
9	SWALE PER DETAIL F SEE SHEET CDT03	NPI	NPI

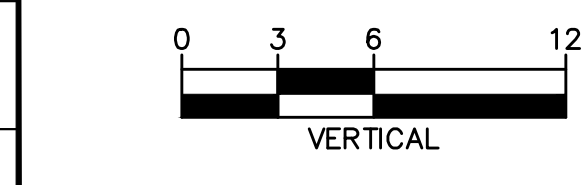
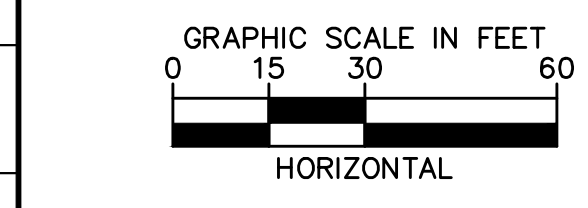
LAKE HAVASU CITY

HAVASUPAI WASH #3
WASH STABILIZATION IMPROVEMENTS

NO.	#	#	#	#
REVISIONS / SUBMISSIONS	-	-	-	-
DATE	-	-	-	-

SHEET NOTES

1. FINE CHANNEL GRADING TO INCLUDE IMPORTED MATERIAL. REFER TO SHEET GN01 FOR EARTHWORK SUMMARY.
2. USE OF VIBRATORY EQUIPMENT NEAR EXISTING PRIVATE WALLS TO BE LIMITED.



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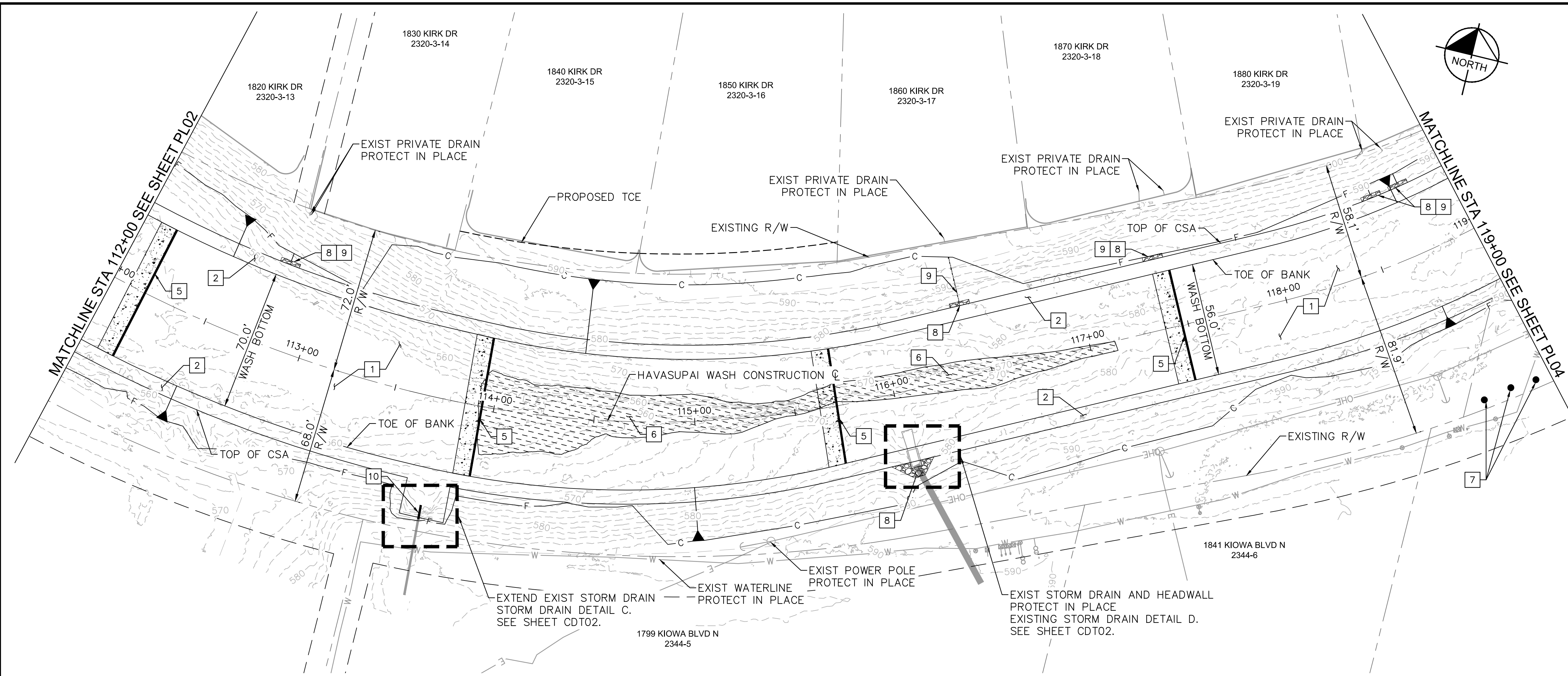
**WASH PLAN AND PROFILE
105+00 TO 112+00**

Professional Engineer Seal: ZACHARY R. SCHMIDT, No. 50959, ARIZONA, U.S.A.

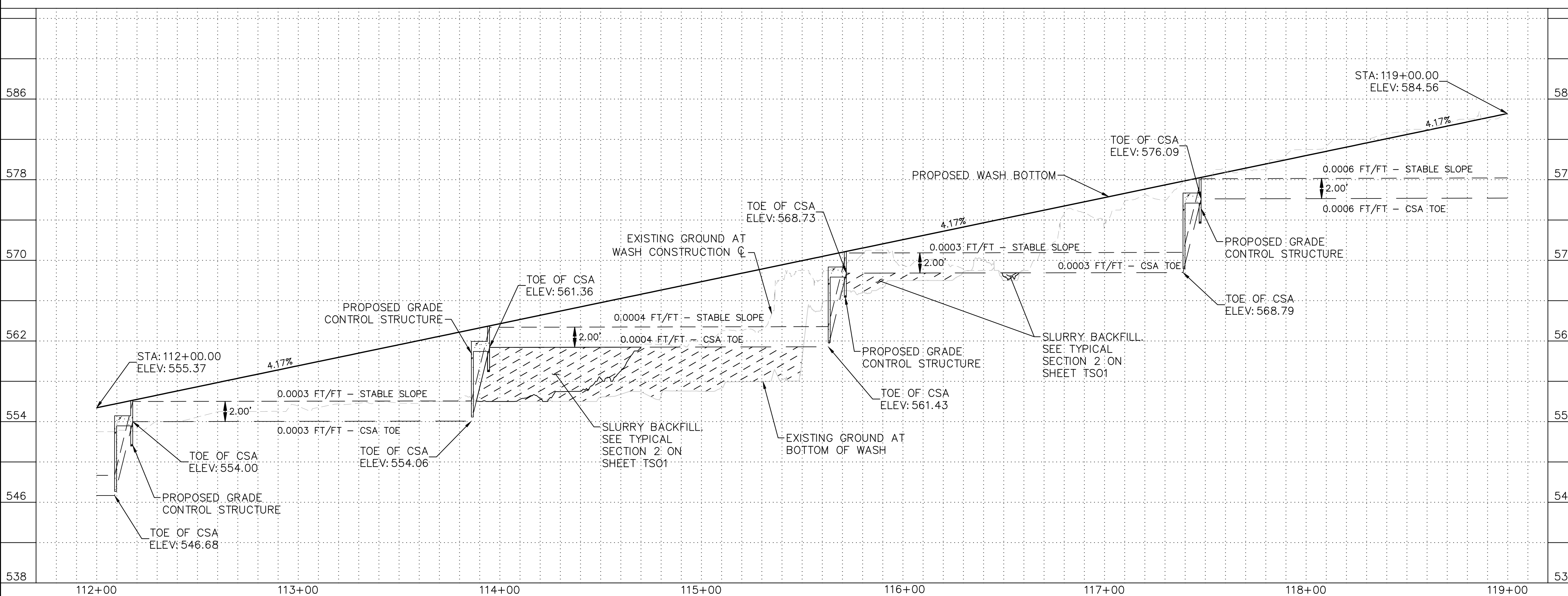
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PL02

Sheet 06 of 12

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HAVASUPAI WASH



CONSTRUCTION NOTES

NO	DESCRIPTION	QTY	UNIT
1	CHANNEL EXCAVATION PER TYPICAL SECTION, SEE SHEET TSO1	11894	CY
2	CSA BANK PROTECTION PER TYPICAL SECTION, SEE SHEET TSO1	5281	CY
5	CONCRETE GRADE CONTROL STRUCTURE PER DETAIL, SEE SHEET STRO1	4	EA
6	FLOWABLE FILL PER TYPICAL SECTION, SEE SHEET TSO1 STA 113+92 TO 116+30	1170	CY
7	36" PERMANENT BOLLARD PER MAG STD DET 140. STA 118+70.47, 78.97' RT STA 118+82.69, 78.93' RT STA 118+93.58, 80.79' RT	3	EA
8	DUMPED RIPRAP, D50-12", 2' THICK	19	SY
9	SWALE PER DETAIL F SEE SHEET CDT03	NPI	NPI
10	EXTEND EXIST STORM DRAIN, MATCH EXIST TYPE AND SIZE	7	LF

NO.	REVISIONS / SUBMISSIONS	DATE

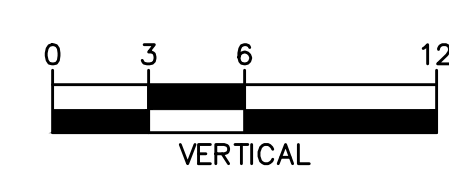
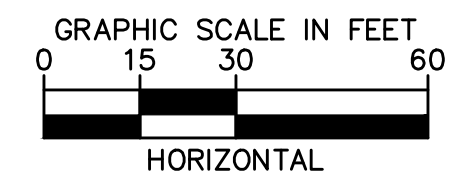
LAKE HAVASU CITY
HAVASUPAI WASH #3
WASH STABILIZATION IMPROVEMENTS

Designed by: ZRS
 Drawn by: JCS
 Checked by: GSB
 Date: 11/20/20
 Dwg. scale: 1" = 30'

WASH PLAN AND PROFILE
112+00 TO 119+00

SHEET NOTES

- FINE CHANNEL GRADING TO INCLUDE IMPORTED MATERIAL. REFER TO SHEET GN01 FOR EARTHWORK SUMMARY.
- USE OF VIBRATORY EQUIPMENT NEAR EXISTING PRIVATE WALLS TO BE LIMITED.



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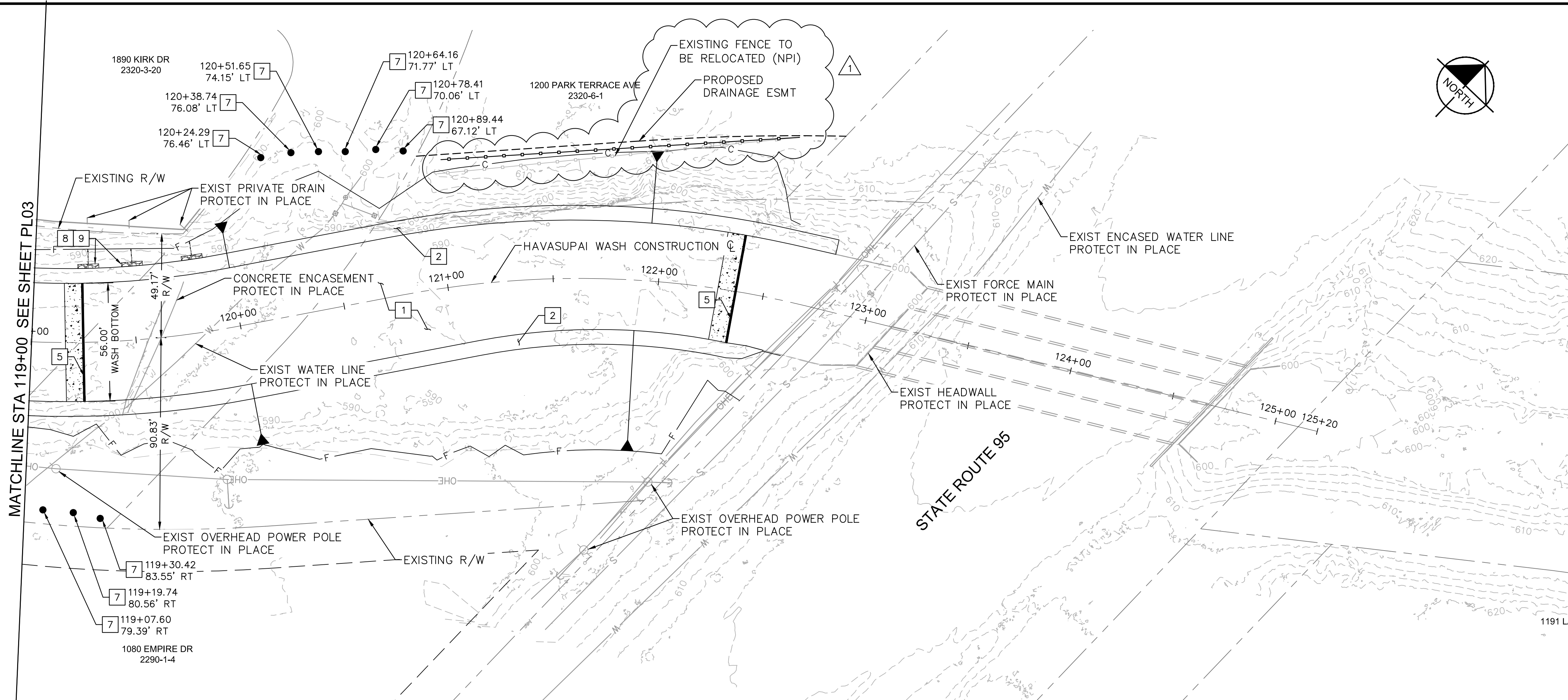
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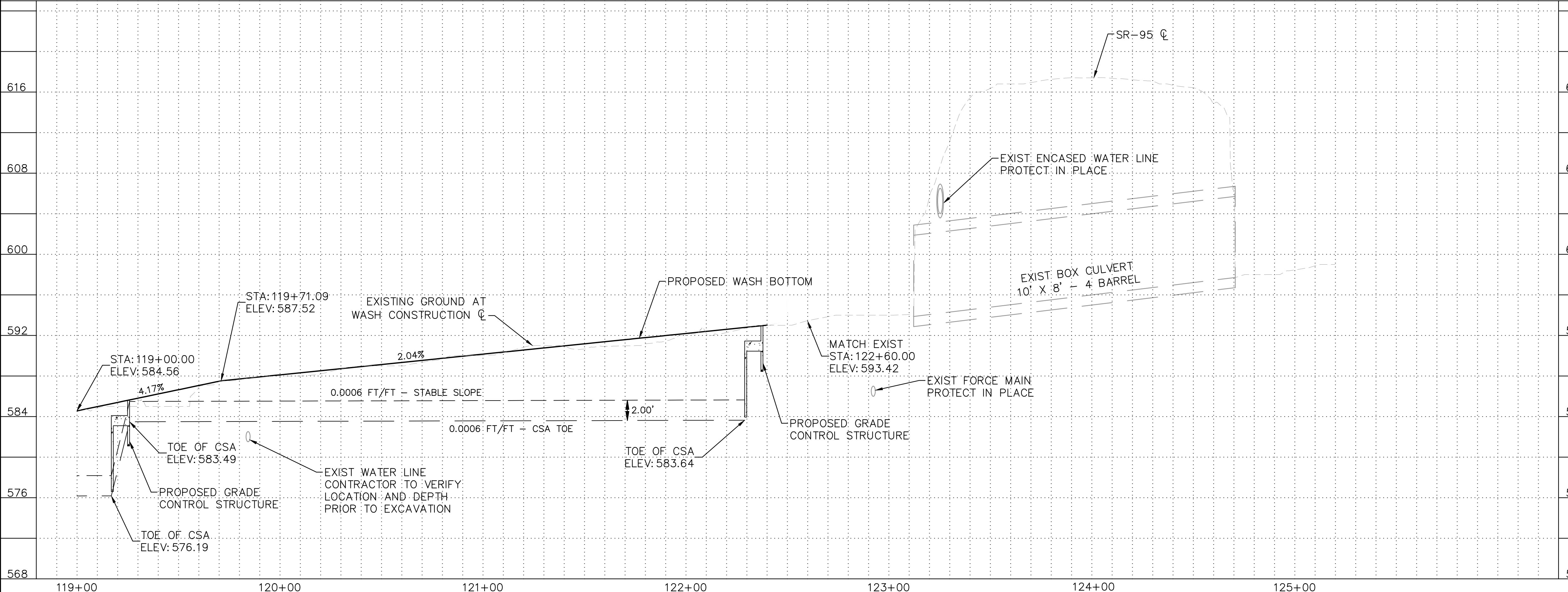
PL03

Sheet 07 of 12

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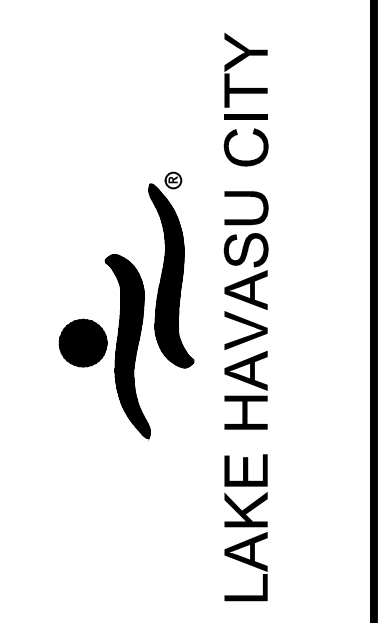


HAVASUPAI WASH



CONSTRUCTION NOTES

NO	DESCRIPTION	QTY	UNIT
1	CHANNEL EXCAVATION PER TYPICAL SECTION, SEE SHEET TS01	3077	CY
2	CSA BANK PROTECTION PER TYPICAL SECTION, SEE SHEET TS01	2408	CY
5	CONCRETE GRADE CONTROL STRUCTURE PER DETAIL, SEE SHEET STRO1	2	EA
7	36" PERMANENT BOLLARD PER MAG STD DET 140	9	EA
8	DUMPED RIPRAP, D50=12", 2' THICK	7	SY
9	SWALE PER DETAIL F SEE SHEET CDT03	NPI	NPI



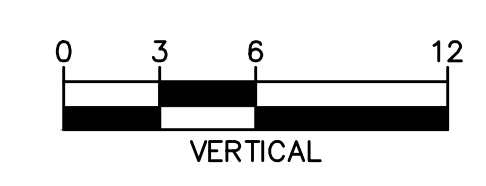
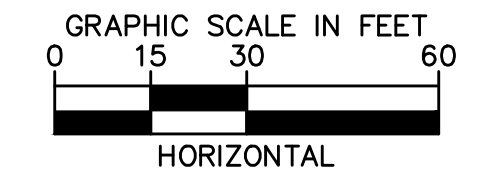
NO.	REVISIONS / SUBMISSIONS	DATE
1	ADDED FENCE NOTE	01/12/21

LAKE HAVASU CITY
HAVASUPAI WASH #3
WASH STABILIZATION IMPROVEMENTS

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 Dwg. scale: 1" = 30'

SHEET NOTES

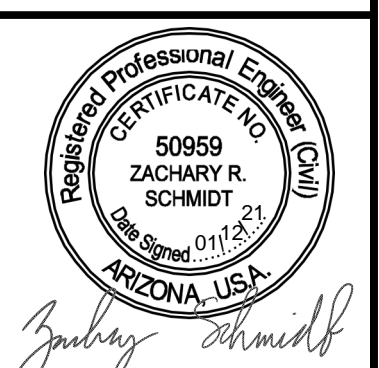
1. FINE CHANNEL GRADING TO INCLUDE IMPORTED MATERIAL. REFER TO SHEET GN01 FOR EARTHWORK SUMMARY.
2. CONTRACTOR TO VERIFY LOCATION OF EXISTING WATER MAIN PRIOR TO START OF CONSTRUCTION.
3. USE OF VIBRATORY EQUIPMENT NEAR EXISTING PRIVATE WALLS TO BE LIMITED.



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WASH PLAN AND PROFILE
119+00 TO 125+00

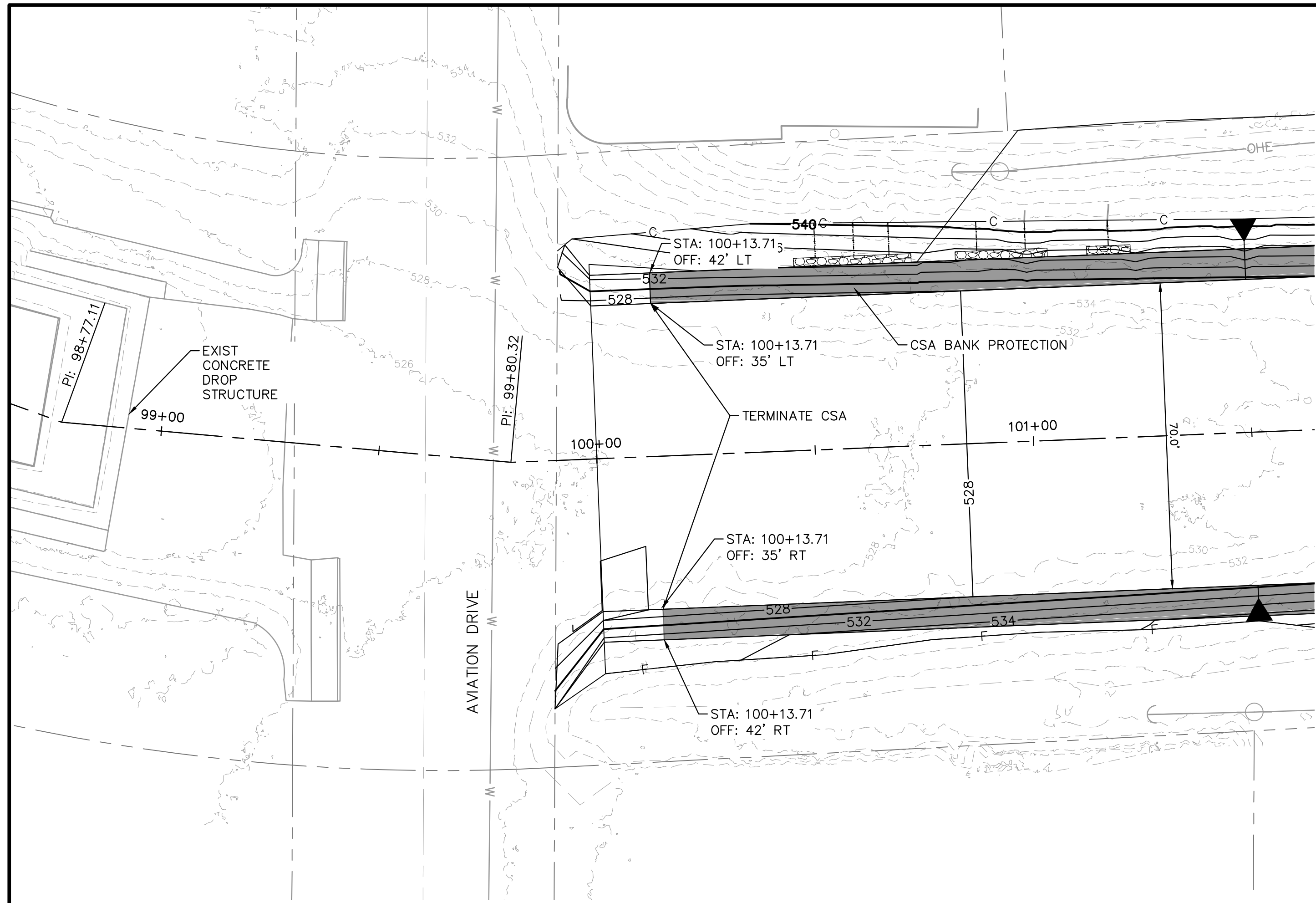


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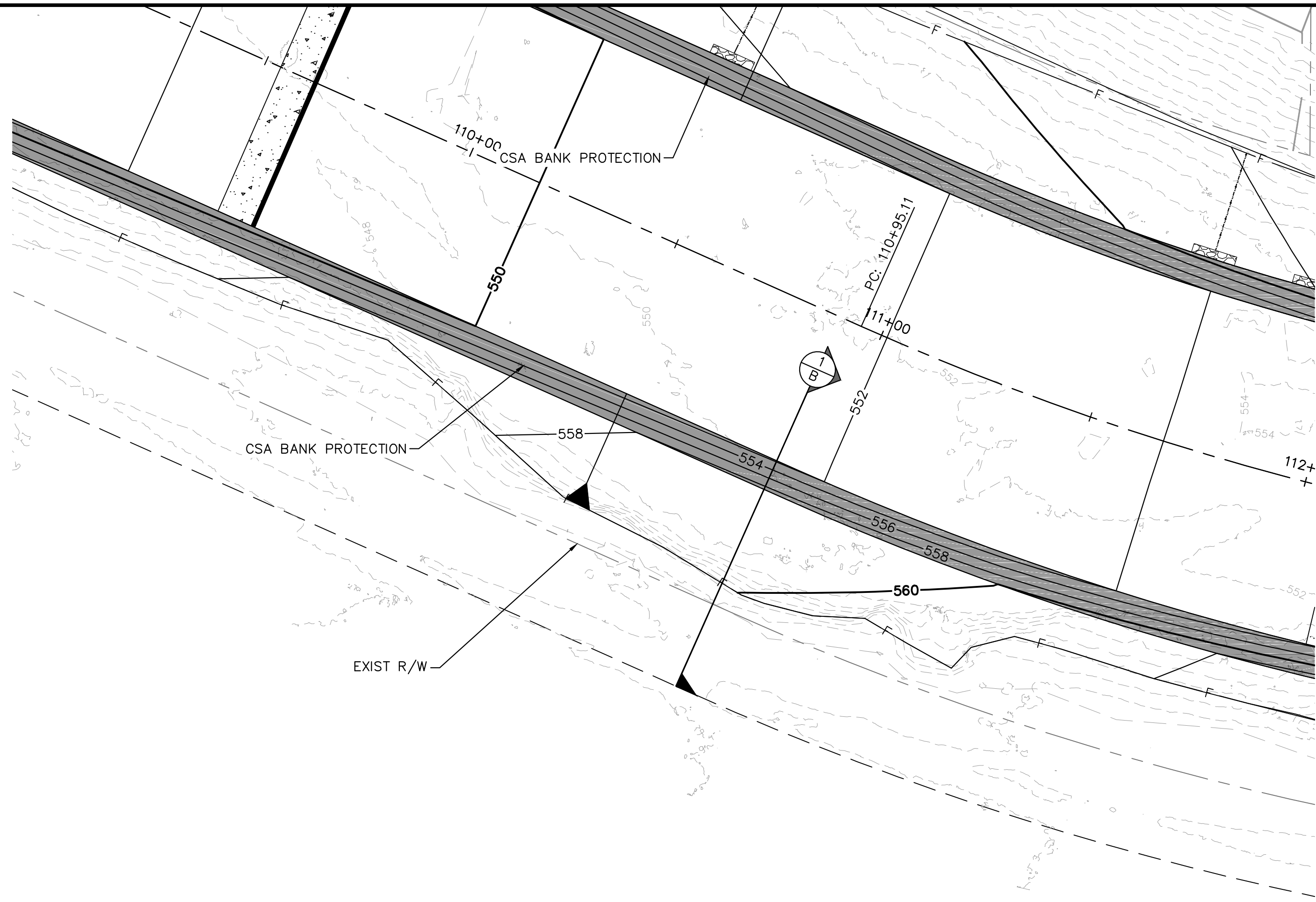
PL04

Sheet 08 of 12

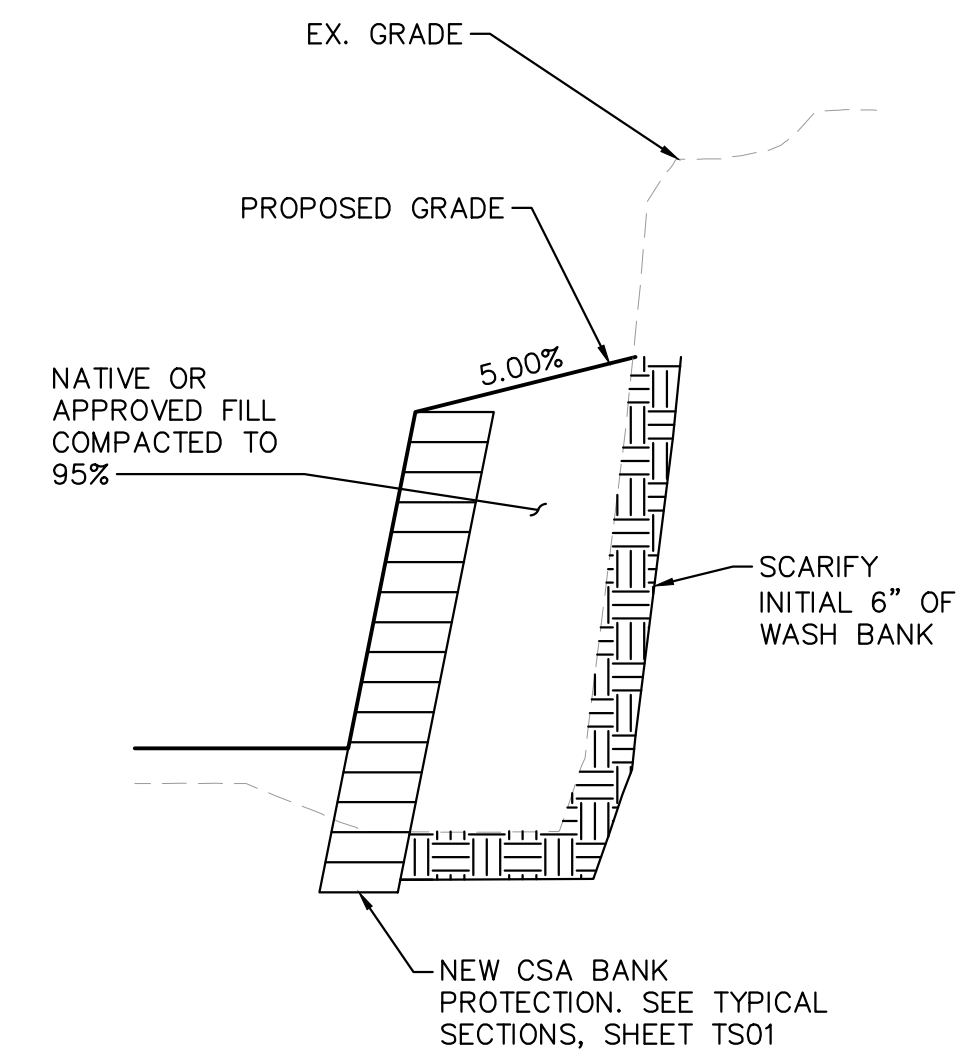
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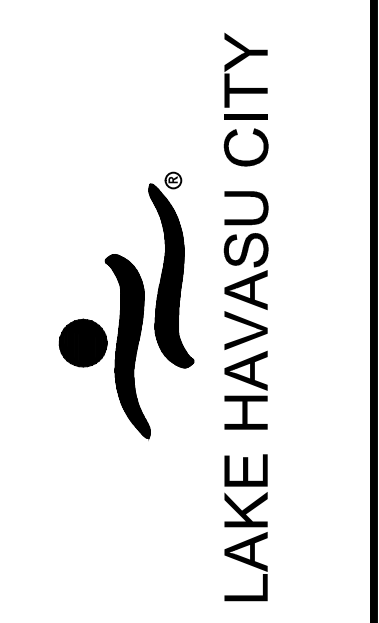
A TIE IN DETAIL
1" = 20'



B DETAILED GRADING AND TIE IN
1" = 20'



1
B DETAIL B SECTION 1
H: 1" = 20' V: 1" = 2'



NO.	REVISIONS / SUBMISSIONS	DATE
#	-	-
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LAKE HAVASU CITY
HAVASUPAI WASH #3
WASH STABILIZATION IMPROVEMENTS

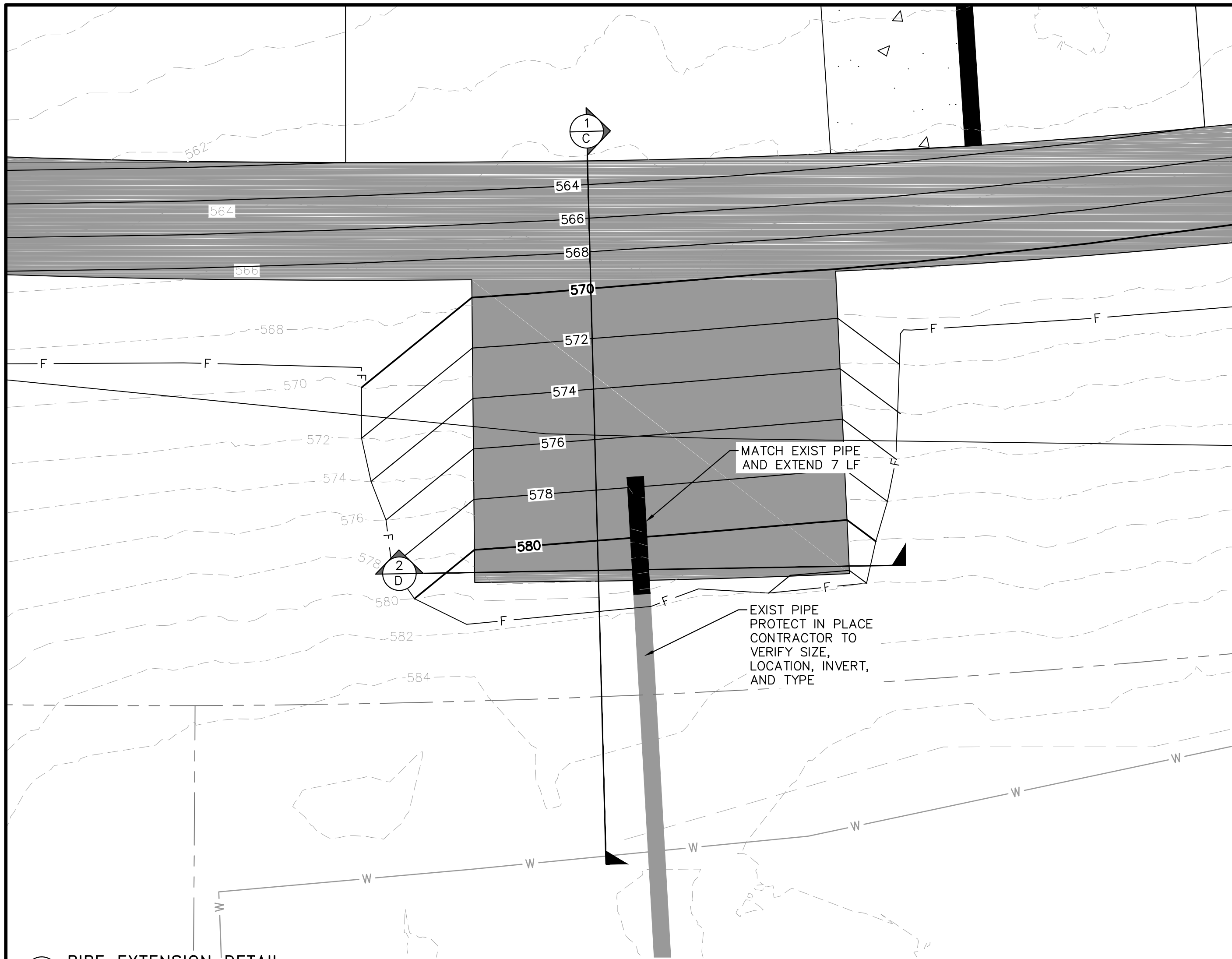
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 Date: 11/2020
 Dwg. scale: 1" = 20'

CHANNEL DETAILS

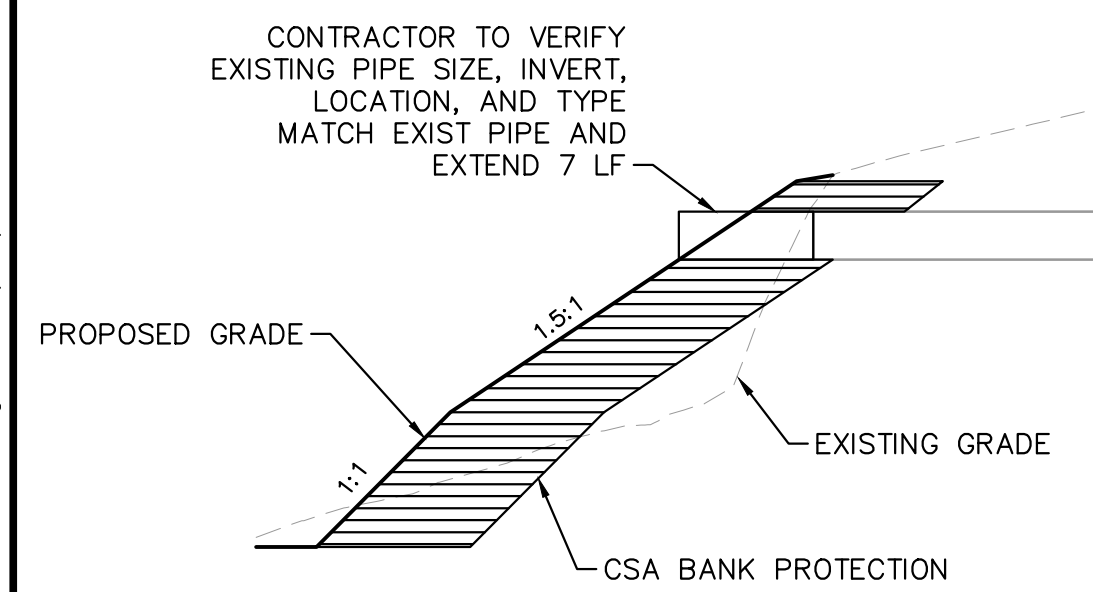


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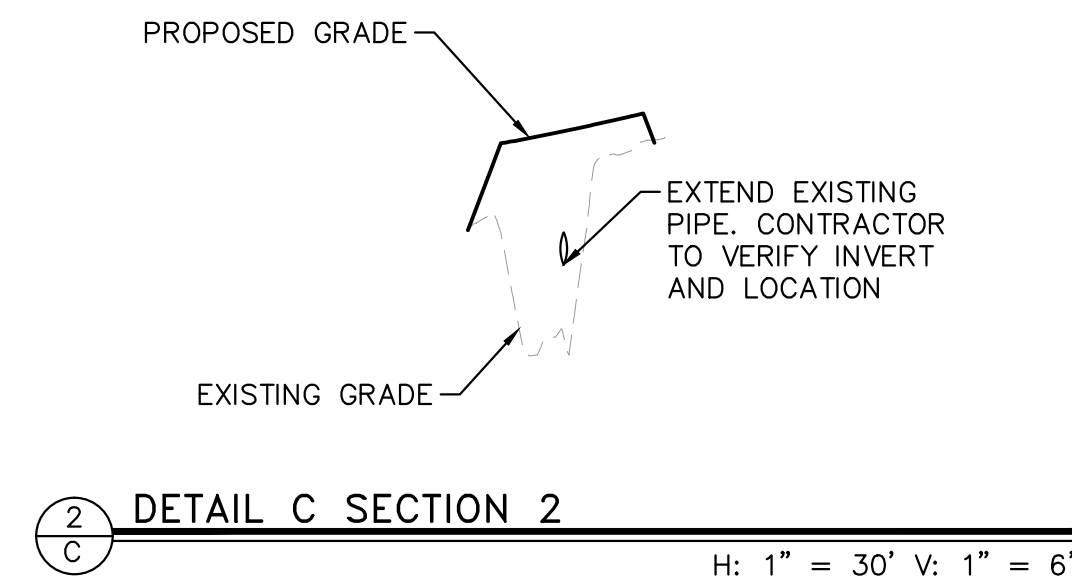
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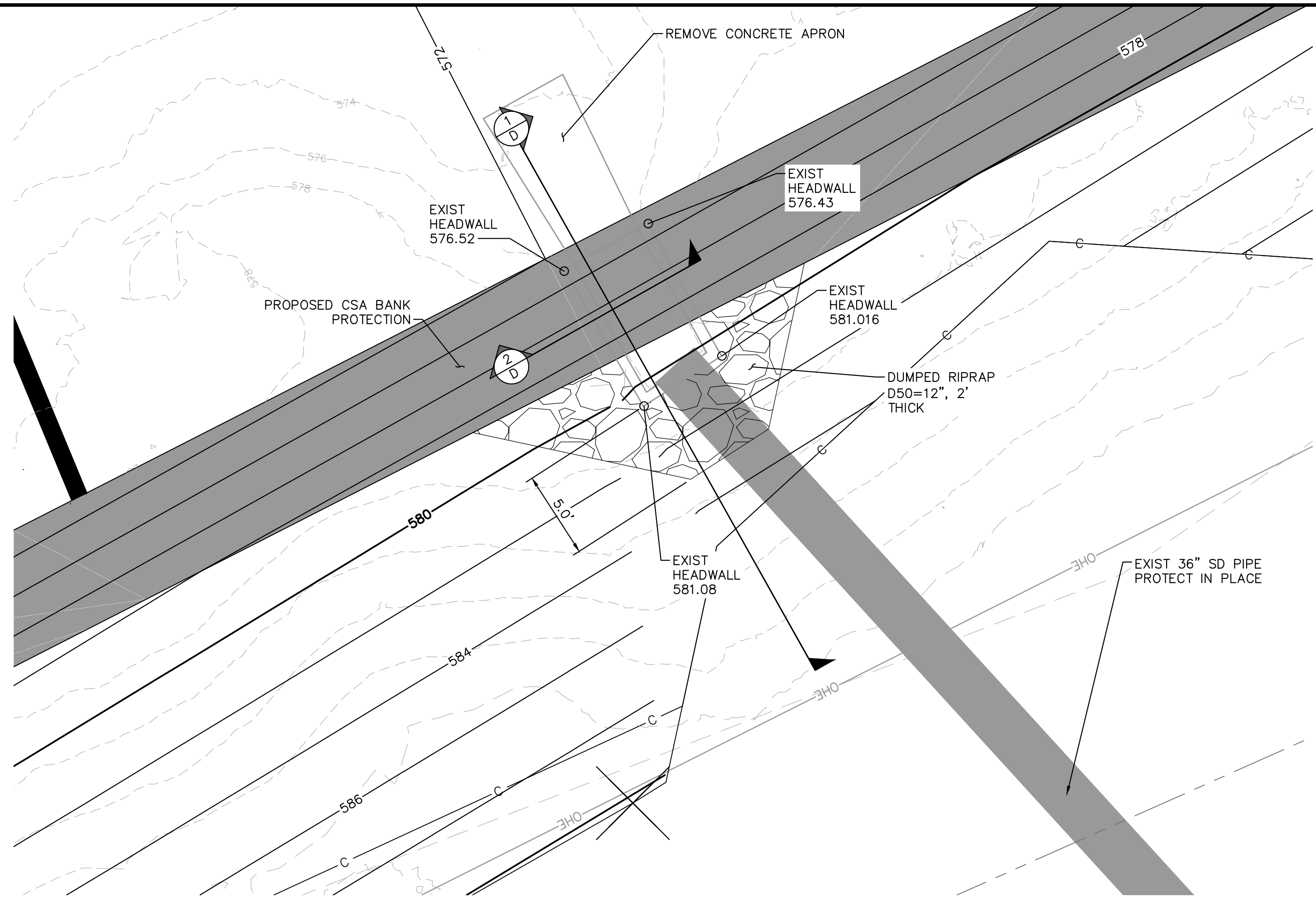
C PIPE EXTENSION DETAIL
H: 1" = 5'



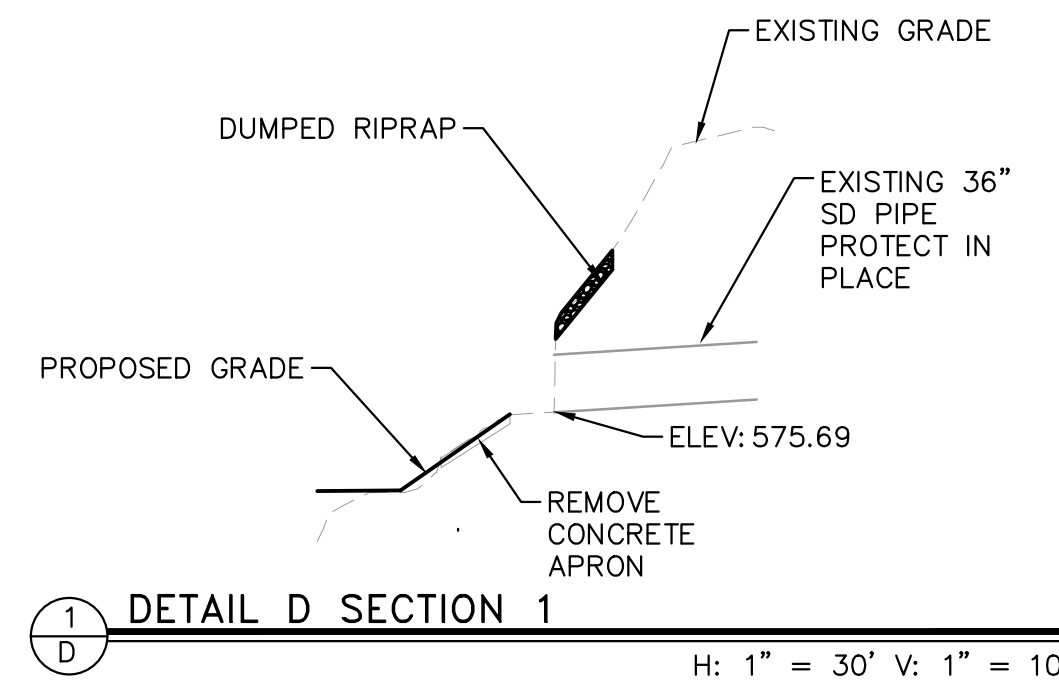
1 C DETAIL C SECTION 1
NTS



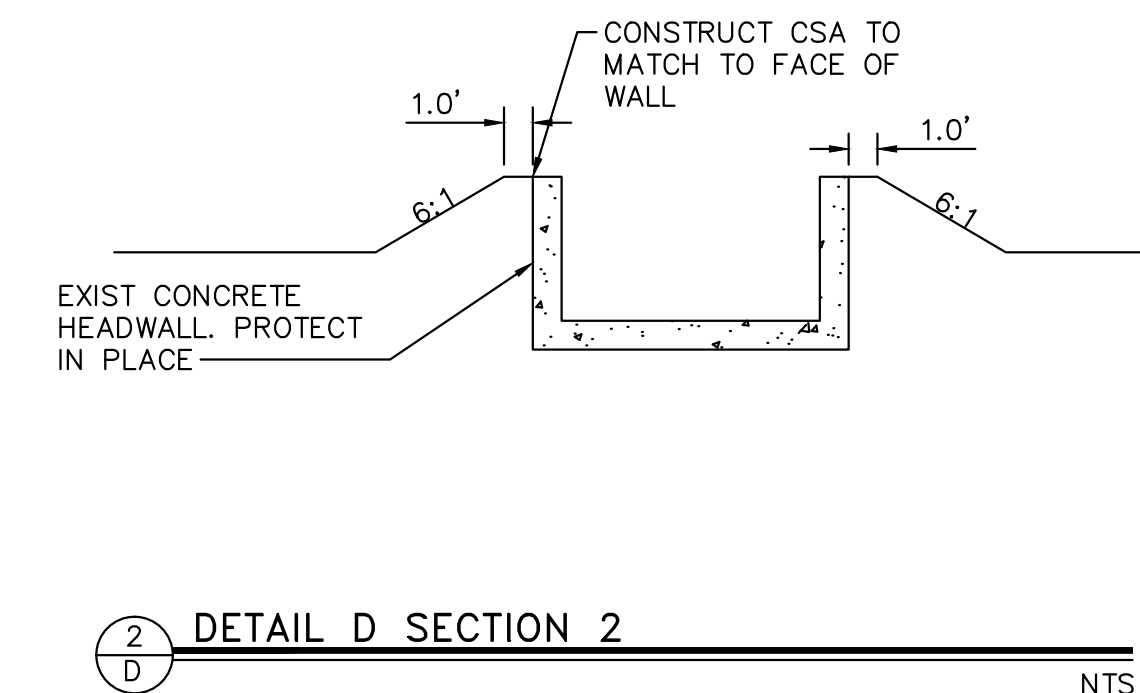
2 C DETAIL C SECTION 2
H: 1" = 30' V: 1" = 6'



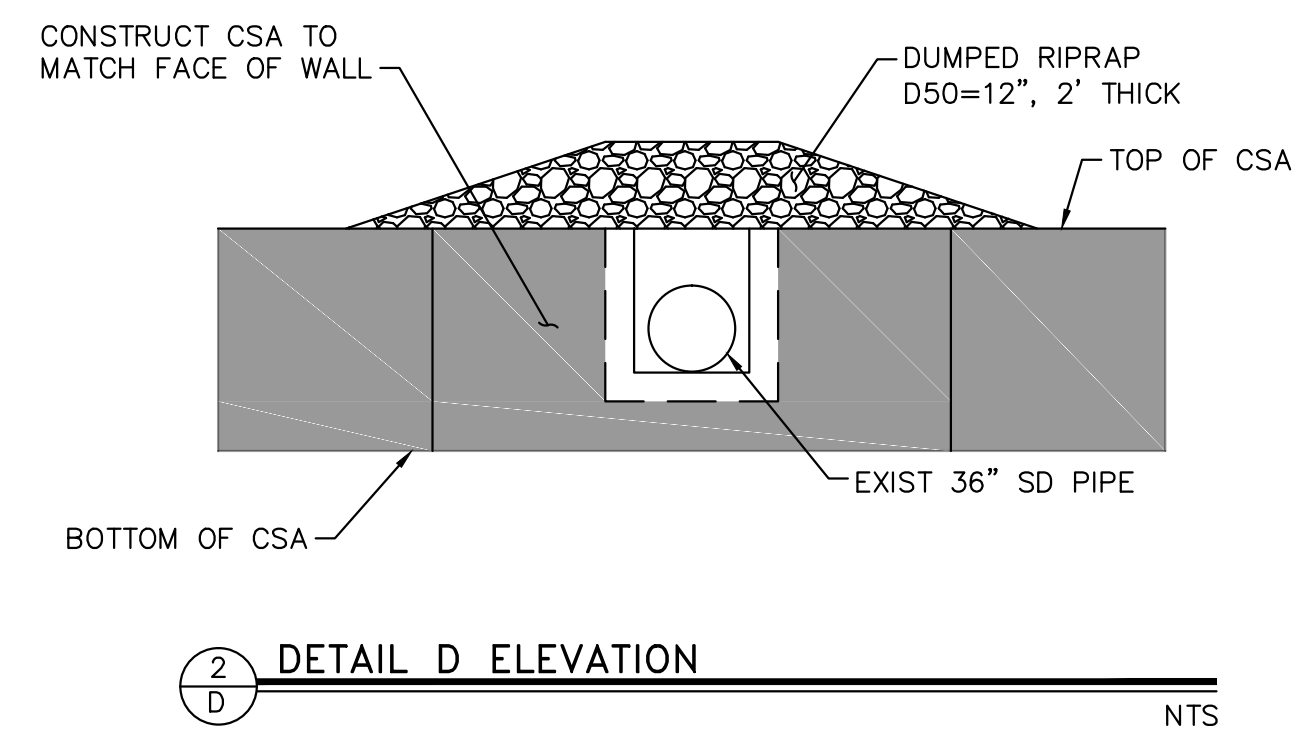
D EXISTING STORM DRAIN DETAIL
H: 1" = 5'



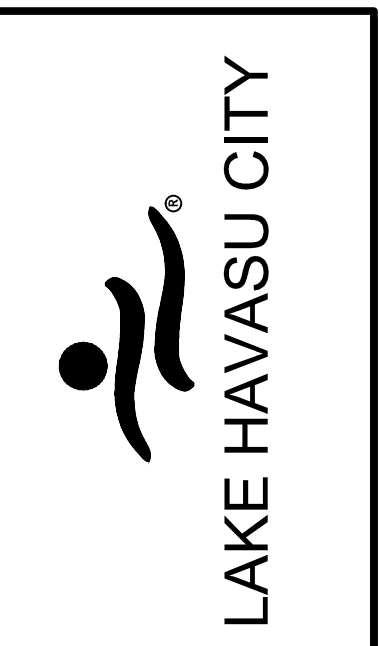
1 D DETAIL D SECTION 1
H: 1" = 30' V: 1" = 10'



2 D DETAIL D SECTION 2
NTS



2 D DETAIL D ELEVATION
NTS



NO.	REVISIONS / SUBMISSIONS	DATE
1		
2		
3		
4		

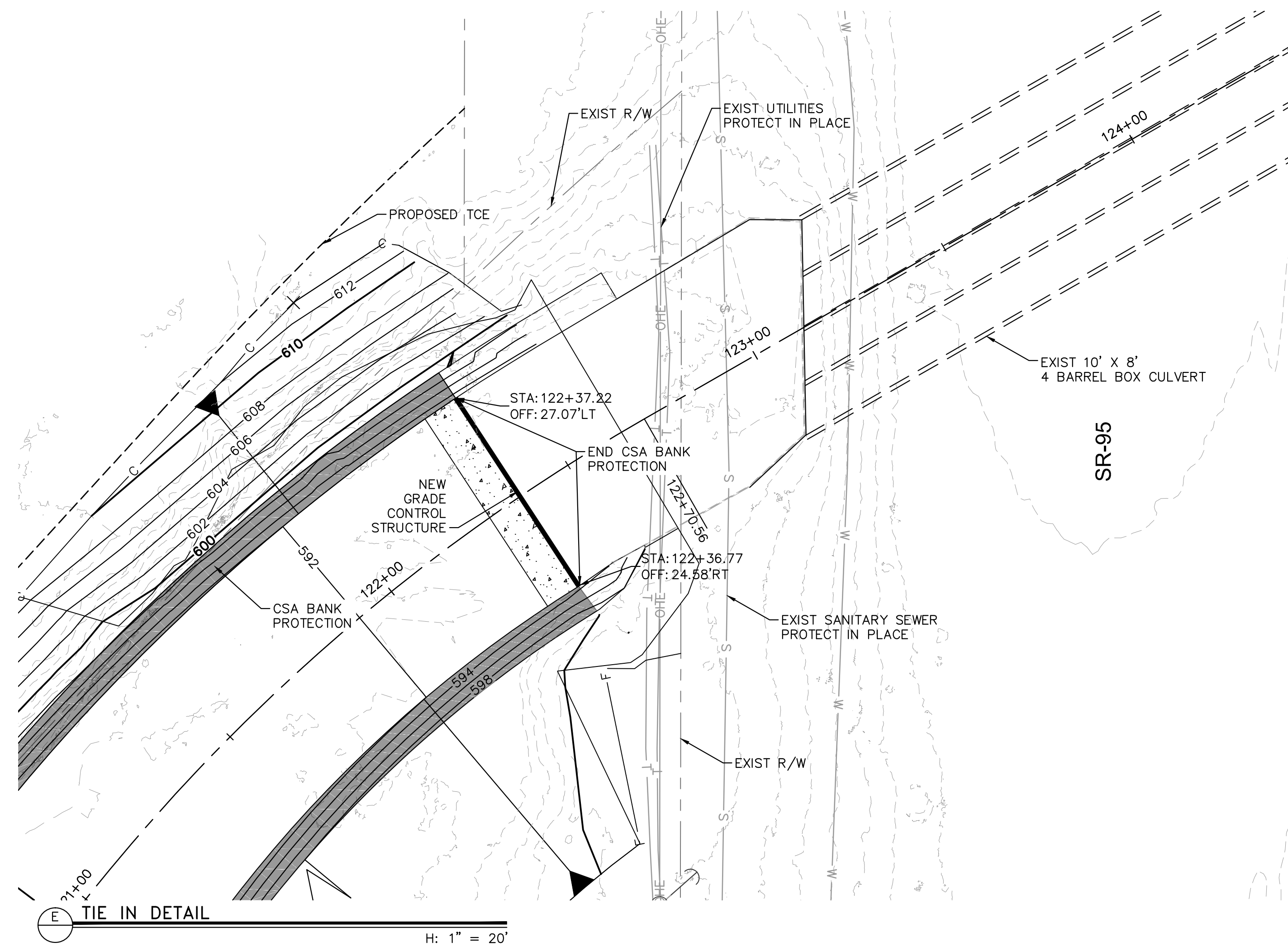
LAKE HAVASU CITY
HAVASUPAI WASH #3
WASH STABILIZATION IMPROVEMENTS

Designed by: ZRS
 Drawn by: JGS
 Checked by: GSB
 Date: 11/2020
 Dwg. scale: 1" = 20'

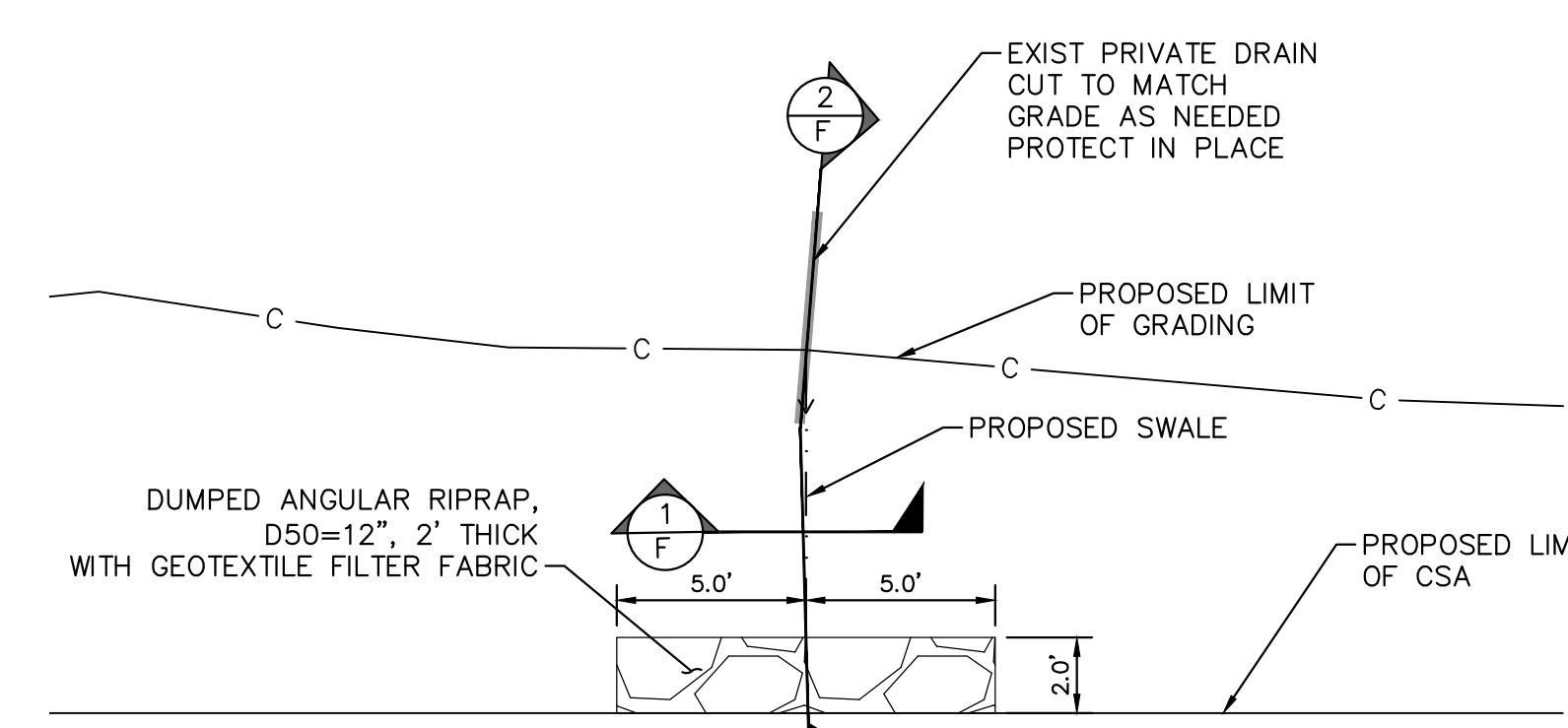
CHANNEL DETAILS



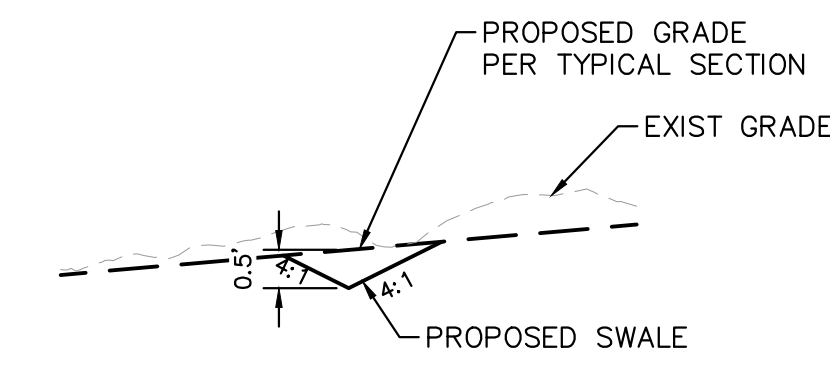
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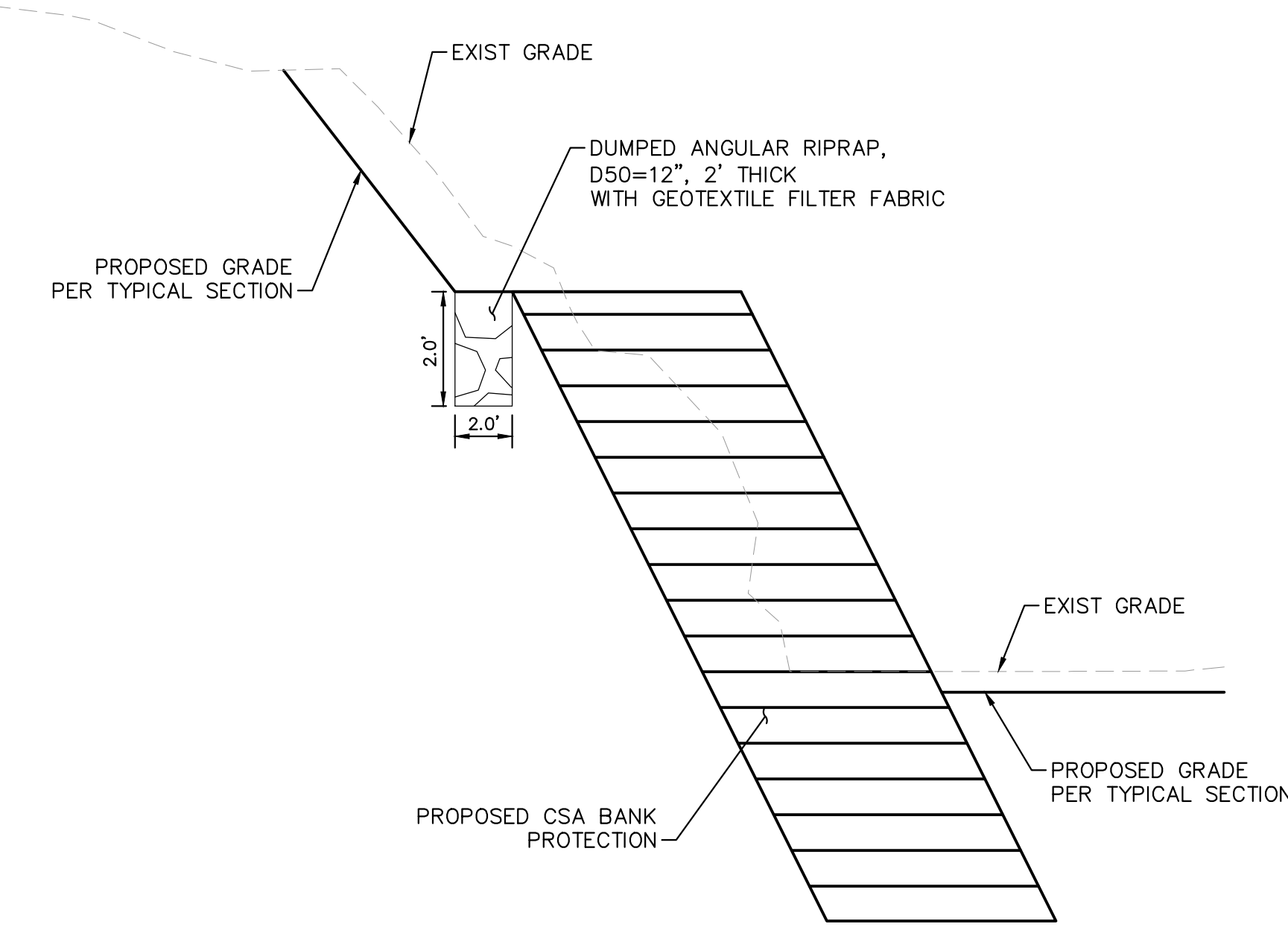
E TIE IN DETAIL
H: 1" = 20'



F SWALE GRADING AND RIPRAP PROTECTION DETAIL
NTS



F DETAIL F SECTION
NTS



F DETAIL F SECTION
NTS



LAKE HAVASU CITY

NO.	#	#	#	#	#	REVISIONS / SUBMISSIONS	DATE

LAKE HAVASU CITY
HAVASUPAI WASH #3
WASH STABILIZATION IMPROVEMENTS

Designed by: ZRS	Drawn by: JGS	Checked by: GSB	Date: 11/20/20
Dwg. scale: 1" = 20'			

CHANNEL DETAILS



Zachary R. Schmidt

Sheet Number:
CDT03
Sheet 11 of 12

GENERAL STRUCTURAL NOTES

A. DESIGN CRITERIA

- SPECIFICATIONS
 - DESIGN 2012 INTERNATIONAL BUILDING CODE WITH LAKE HAVASU CITY AMENDMENTS.
 - CONSTRUCTION LAKE HAVASU CITY PROJECT SPECIFICATIONS AND SPECIAL PROVISIONS, AND UNIFORM SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, MARICOPA COUNTY (MAG), LATEST EDITION.
- DESIGN LOADS
 - DEAD LOAD - WEIGHT OF BACKFILL = 120 pcf
 - EQUIVALENT FLUID PRESSURE FOR ACTIVE SOIL PRESSURE = 40 psf/ft
 - EQUIVALENT FLUID PRESSURE FOR PASSIVE SOIL PRESSURE = 250 psf/ft
 - COEFFICIENT OF FRICTION = 0.40
 - LIVE LOAD SURCHARGE = 100 psf (2012 IBC TABLE 1607.1)

B. FOUNDATION

- FOUNDATION DATA BASED ON GEOTECHNICAL ENGINEERING REPORT FOR HAVASUPAI WASH #3 STABILIZATION DESIGN PARAMETERS, AVIATION DRIVE TO SR95, SOUTH KIRK DRIVE LAKE HAVASU CITY, ARIZONA. PREPARED BY RAMM, INC., PROJECT NO. G24928, DATED JULY 10, 2018.
- ALLOWABLE BEARING PRESSURE: (BOTTOM OF FOOTING BELOW GRADE)
 - 3000 PSF (MIN. 2'-0" BELOW LOWEST ADJACENT FINISHED GRADE)
 - SOIL SITE CLASS DESIGNATION D

C. CONCRETE AND REINFORCEMENT

- ALL CONCRETE FOR STRUCTURES SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 POUNDS PER SQUARE INCH AT 28 DAYS EXCEPT AS NOTED (MAG SECTION 725, CLASS AA).
- REINFORCING BARS SHALL BE NEW BILLET STEEL CONFORMING TO ASTM DESIGNATION A615, GRADE 60, DEFORMED. REINFORCING BARS SHOWN ON THE PLANS TO BE WELDED SHALL BE NEW BILLET STEEL CONFORMING TO ASTM DESIGNATION A706, GRADE 60, DEFORMED.
- CONCRETE DESIGN IS IN CONFORMANCE WITH "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318-11), AND 2012 IBC.
- DETAIL, FABRICATE AND ERECT REINFORCEMENT BARS, INCLUDING BAR SUPPORTS, SPACERS, ETC. IN ACCORDANCE WITH "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT (ACI SP-66(04))."
- CONCRETE COVER FOR REINFORCEMENT BARS SHALL CONFORM TO THE FOLLOWING, UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
 - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH . . . 3 INCHES
 - CONCRETE EXPOSED TO EARTH OR WEATHER 2 INCHES
 NOTE: CLEARANCES MAY BE REDUCED 1/2 INCH FOR STIRRUPS AND TIES.
- CHAMFER EXPOSED CONCRETE EDGES 3/4 INCH X 3/4 INCH UNLESS NOTED OTHERWISE.

D. JOINTS

CONCRETE FOOTINGS
FOOTING MAY BE CONTINUOUS WITH NO JOINTS.

CONCRETE WALL

WALL SHALL HAVE WEAKENED PLANE JOINTS SPACED AT NO MORE THAN 24'-0" APART OR AS SHOWN. REINFORCING STEEL SHALL PROTECT THROUGH THE JOINT.

E. GEOMETRY

REFERENCE GRADING PLANS FOR GRADE CONTROL STRUCTURE LAYOUT.
TOP OF GRADE CONTROL STRUCTURE AND CUT OF WALL SHALL BE AS SHOWN ON THE TYPICAL SECTION. HEIGHT OF WALL MAY VARY ± INCHES.

LAYOUT LINE IS REFERENCED TO THE CENTER FACE OF THE GRADE CONTROL STRUCTURE HEADWALL AS SHOWN ON TYPICAL SECTION.

F. FINISHES NOTES

- WALL SHALL HAVE A CLASS II FINISH PER MAG SECTION 505.9.3

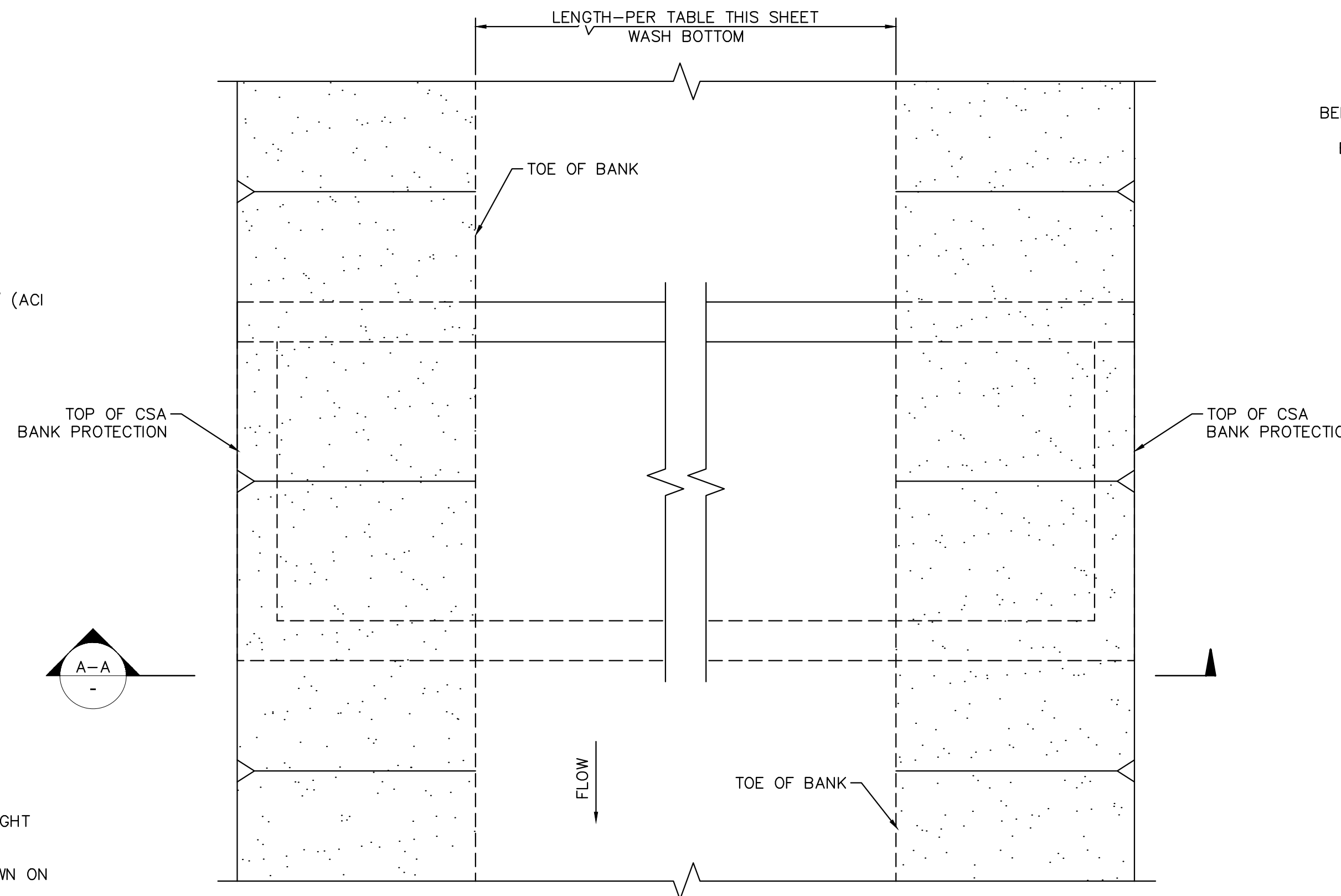
G. SPECIAL INSPECTION

- SPECIAL INSPECTION SHALL BE REQUIRED AT OWNERS DISCRETION. SPECIAL INSPECTION INCLUDES MATERIALS, INSTALLATION, FABRICATION, ERECTION OR PLACEMENT OF COMPONENTS AND CONNECTIONS REQUIRING SPECIAL EXPERTISE TO ENSURE COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS, AND IN ACCORDANCE WITH 2012 IBC INTERNATIONAL CODE.
- COORDINATE SCHEDULES WITH AGENCY PERFORMING SPECIAL INSPECTION TO INSURE AMPLE TIME IS AVAILABLE TO PERFORMED REQUIRED TASKS.
- THE FOLLOWING ITEMS REQUIRE SPECIAL INSPECTION:
 - INSPECTION OF CONCRETE CONSTRUCTION (2012 IBC TABLE 1705.3).
 - INSPECTION OF SOILS (2012 IBC TABLE 1705.6).

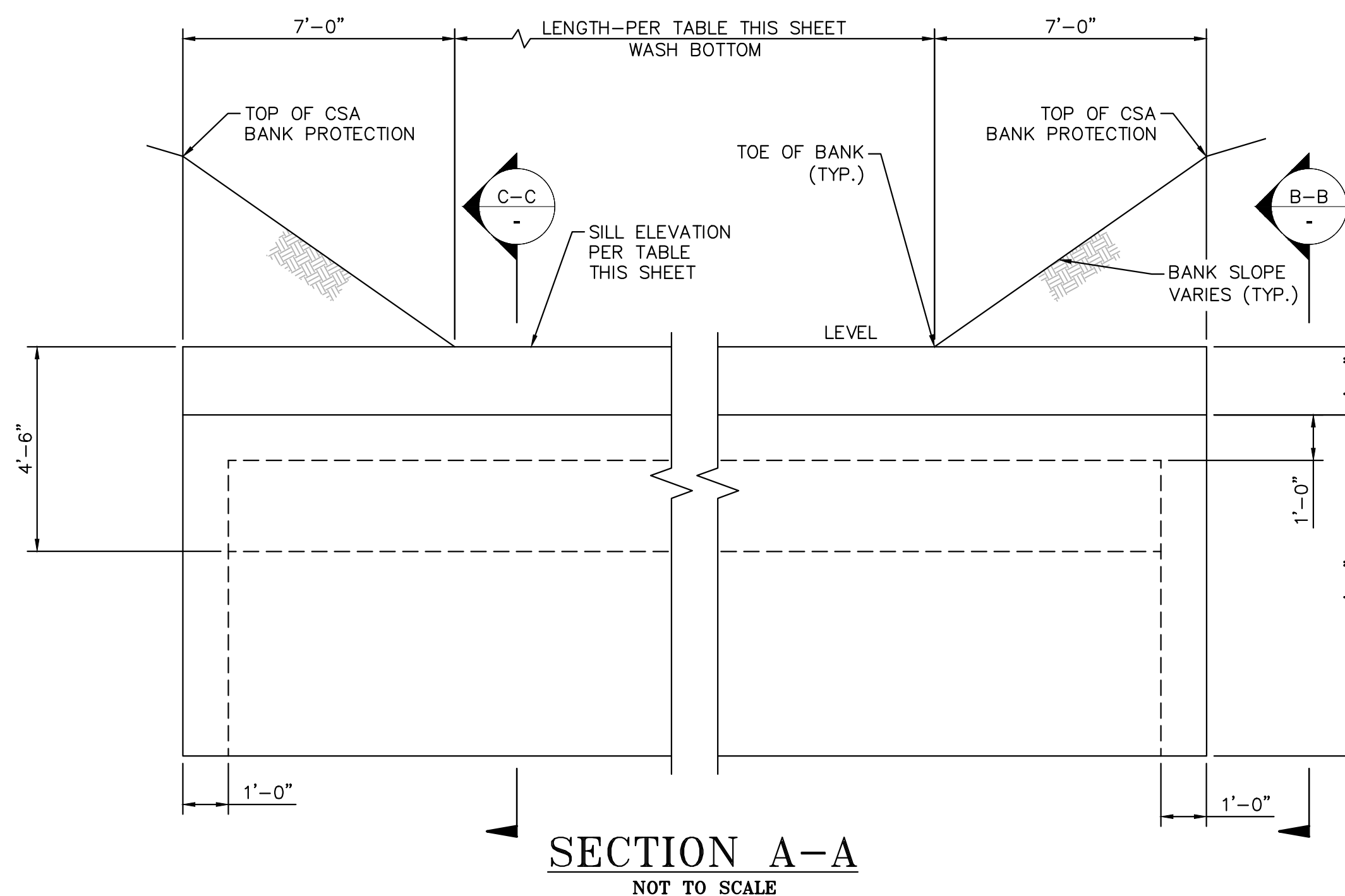
H. ABBREVIATIONS

ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS INTERNATIONAL
CLR	CLEARANCE
CONT	CONTINUOUS
ELEV	ELEVATION
EX	EXISTING
FG	FINISHED GRADE
FTG	FOOTING
H	HEIGHT
LOL	LAYOUT LINE
MAX	MAXIMUM
MIN	MINIMUM
MPH	MILES PER HOUR
NTS	NOT TO SCALE
O.C.	ON CENTER
PCF	POUNDS PER CUBIC FOOT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
TYP	TYPICAL
TF	TOP OF FOOTING
TW	TOP OF WALL

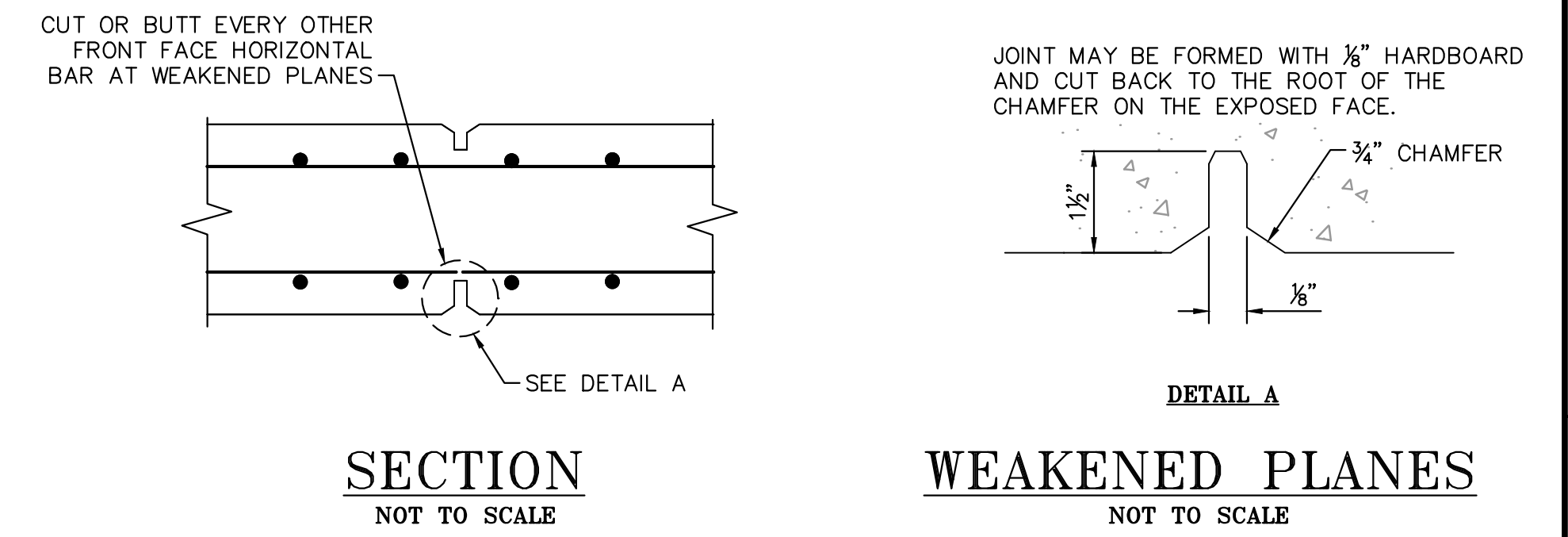
GRADE CONTROL STRUCTURE		
HAVASUPAI WASH 3		
LOCATION (STA)	LENGTH (FT)	SILL ELEVATION (FT)
103+28	70	533.62
106+48	70	541.20
109+62	70	548.59
112+17	70	556.00
113+94	69.5	563.36
115+71	57.5	570.73
117+47	56	578.09
119+25	56	585.49
122+37	56	592.95



GRADE CONTROL STRUCTURE PLAN VIEW
NOT TO SCALE

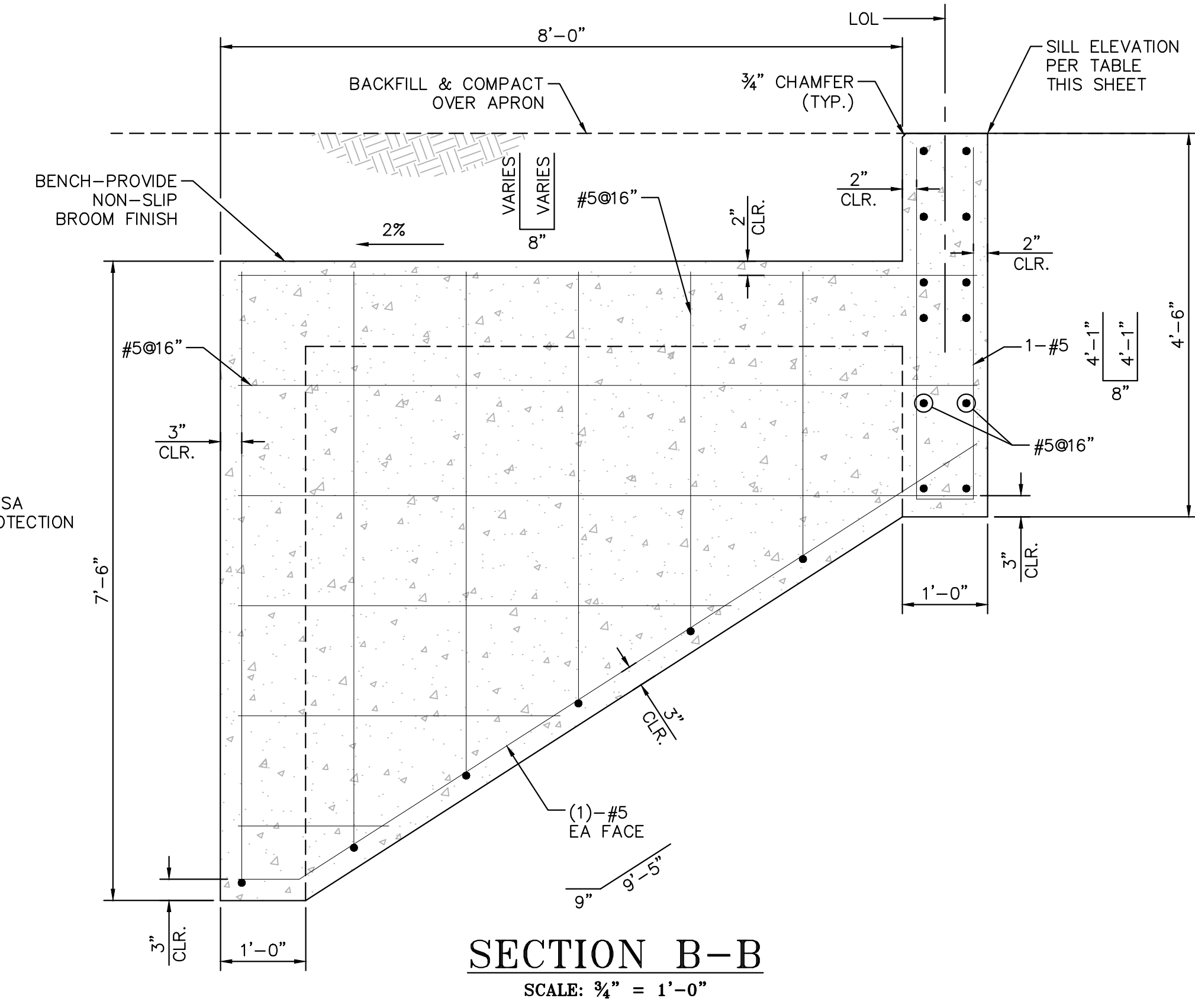


SECTION A-A
NOT TO SCALE

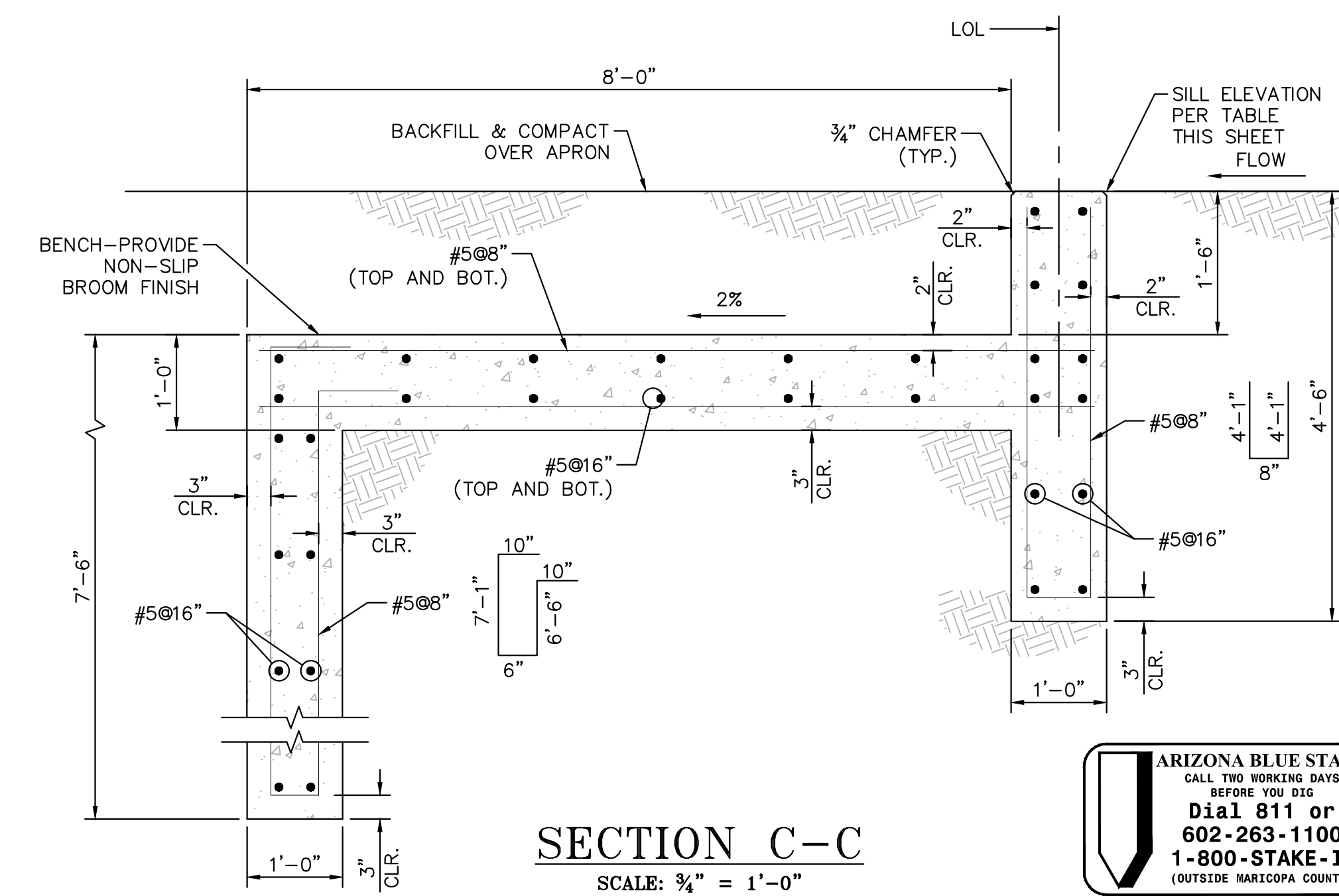


SECTION
NOT TO SCALE

WEAKENED PLANES
NOT TO SCALE



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

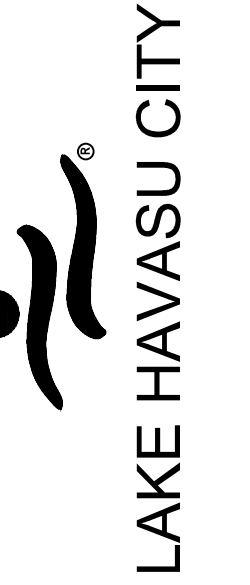


SECTION C-C
SCALE: 3/4" = 1'-0"

ARIZONA BLUE STAKE
CALL TWO WORKING DAYS BEFORE YOU DIG.
Dial 811 or 602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

Kimley»Horn

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7740 NORTH 16TH STREET #300, PHOENIX, ARIZONA 85020
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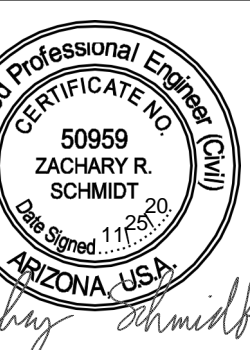


NO.	REVISIONS / SUBMISSIONS	DATE

LAKE HAVASU CITY
HAVASUPAI WASH #3
WASH STABILIZATION IMPROVEMENTS

Designed by: VAM
Drawn by: VAM
Checked by: BMS
Date: 11/2020
Dwg. scale: AS - SHOWN

GENERAL STRUCTURAL NOTES



Sheet Number:
STR01
Sheet 12 of 12

K:\PHX_WaterResources\191245009 - Havasupai Wash #3\CADD\Sheets\191245009_STR01.dwg 11/25/2020 1:25 PM RITCHIE, EDGAR