

**BUILDING CODE OR APPLICABLE DESIGN STANDARDS**

1. INTERNATIONAL BUILDING CODE, 2015 EDITION

**REFERENCED GEOTECHNICAL REPORT IF AVAILABLE/APPLICABLE**

1. FIRM: CHJ ENGINEERING, INC.
2. REPORT NUMBER: 172-17-51
3. DATE: 01-22-18
4. ALLOWABLE BEARING CAPACITY(FOOTING): 1500 PSF
5. RECOMMENDED ACTIVE EQUIVALENT FLUID PRESSURE: 34 PSF PER NOTE 3.

**GENERAL**

1. THESE SPECIFICATIONS ARE APPLICABLE ONLY FOR WALLS 1'-6" TO 3'-0" IN RETAINED HEIGHT (H).
2. TEMPORARY SLOPE - BY BUILDER AS REQUIRED FOR SAFETY.
3. LOADS AND FACTORS OF SAFETY

ACTIVE PRESSURES USED IN DESIGN FOR THE SOIL BACKFILL WERE DERIVED FROM COULOMB'S THEORY OF SOIL PRESSURE CORRESPONDING TO A CLEAN GRAVEL-SAND BACKFILL PLACED AS SHOWN WITH AN INTERNAL FRICTION ANGLE OF 33. EQUIVALENT FLUID PRESSURE IS APPROXIMATELY 35 PSF PER FOOT OF RETAINED SOIL DEPTH.

PASSIVE PRESSURES FOR THE SOIL IN FRONT OF THE WALL FOOTING WERE DERIVED FROM COULOMB'S THEORY OF SOIL PRESSURE BASED ON IN-SITU SOIL OR PREPARED COMPACTED FILL PER THE REFERENCED GEOTECHNICAL REPORT ABOVE.

ALLOWABLE BEARING PRESSURES WERE BASED ON THE REFERENCED GEOTECHNICAL REPORT ABOVE. IF NO REPORT WAS MADE AVAILABLE, A MINIMUM ALLOWABLE BEARING PRESSURE OF 1500 PSF WAS USED FOR DESIGN.

SURCHARGE LOADS - UNLESS NOTED OTHERWISE ON THE DETAIL & AND SCHEDULES SURCHARGE LOADS ARE NOT EXPECTED FOR STRUCTURES LOCATED WITHIN DISTANCE FROM RETAINING WALLS.

FACTORS OF SAFETY - A FACTOR OF SAFETY OF 2.0 FOR OVERTURNING AND 1.5 FOR SLIDING WAS USED FOR THE DETAILS AND SCHEDULES SHOWN ON THE FOLLOWING SHEETS.

4. UNLESS NOTED OTHERWISE THE RETAINING WALL DETAILS AND SCHEDULES SHOWN DO NOT ACCOUNT FOR GLOBAL SLOPE STABILITY.

IF GLOBAL SLOPE STABILITY IS A CONCERN, A GEOTECHNICAL FIRM WITH EXPERIENCE IN GLOBAL STABILITY ANALYSES SHOULD BE RETAINED IN ORDER TO PROVIDE RECOMMENDATIONS FOR THE WALL DESIGN.

5. COMPACTED BACKFILL SHALL BE PROPERLY PLACED AND COMPACTED TO MINIMUM 95 PERCENT OF STANDARD PROCTOR COMPACTION VERIFICATION BY OTHERS.

6. WEEP HOLE DRAINING - PROVIDE MINIMUM 3/4" WEEP HOLES @ 10'-0".

1. IF CONDITIONS CHANGE FROM THOSE DESCRIBED HEREIN NOTIFY THE STRUCTURES IMMEDIATELY TO DETERMINE THE EFFECT, IF ANY, ON THE RETAINING WALL DESIGN.

2. FORMED VERTICAL CONTROL JOINTS ARE RECOMMENDED TO CONTROL SHRINKAGE CRACK LOCATIONS. CONTROL JOINTS SHOULD BE SPACED AT 20'-0" O.C. MAX. JOINTS SHALL BE AT LEAST 1/2" x 4".

3. DRAINAGE SEWER OR OTHER MISCELLANEOUS CONDUIT SHALL NOT BE PLACED IN FRONT OF THE TOE OF THE WALL WITHOUT COORDINATION AND APPROVAL WITH THE STRUCTURES.

**MATERIALS**

1. ALL MORTAR SHALL BE TYPE "M", 2500 PSI, FULL HEAD 4 BED JOINT MORTAR IS REQUIRED. TESTING BY OTHERS, IF DESIRED SHALL CONFORM TO ASTM C270.
2. ALL STONE SHALL BE EARTH-TONE COLORED, CLEAN, HARD, DENSE, AND WEATHER RESISTANT 12" TO 18" MILSAP SANDSTONE FROM A MILSAP ROCK QUARRY. THE AVERAGE DENSITY OF THE SANDSTONE SHALL RANGE FROM 135 PCF TO 145 PCF.
3. DRAINAGE MATERIAL - ON WALLS OVER 4'-0" IN HEIGHT, USE 1 1/2" TO 3" DIAMETER CRUSHED CONCRETE AND UP TO 6" DIAMETER SANDSTONE ROCK PLACED NOT COMPACTED. SANDSTONE NOT TO EXCEED 20% OF GRAVEL BACKFILL. WRAP IN FILTER FABRIC. FOR WALLS LESS THAN 4'-0" IN HEIGHT, USE 1 1/2" TO 6" CRUSHED CONCRETE OR SANDSTONE ROCK WITH NO RESTRICTIONS ON PERCENTAGE OF USE FOR EITHER MATERIAL WRAP IN FILTER FABRIC.
4. FILTER FABRIC SHALL BE TERRA TEX N045 BY HANES GEO COMPONENTS OR APPROVED EQUAL.

DESIGNED SPECIFICALLY FOR WALLCO RETAINING WALLS, INC. FOR MORE INFORMATION CONTACT ERIC PADRON OR GARY BARKS AT 817-501-4901

**FOOTINGS**

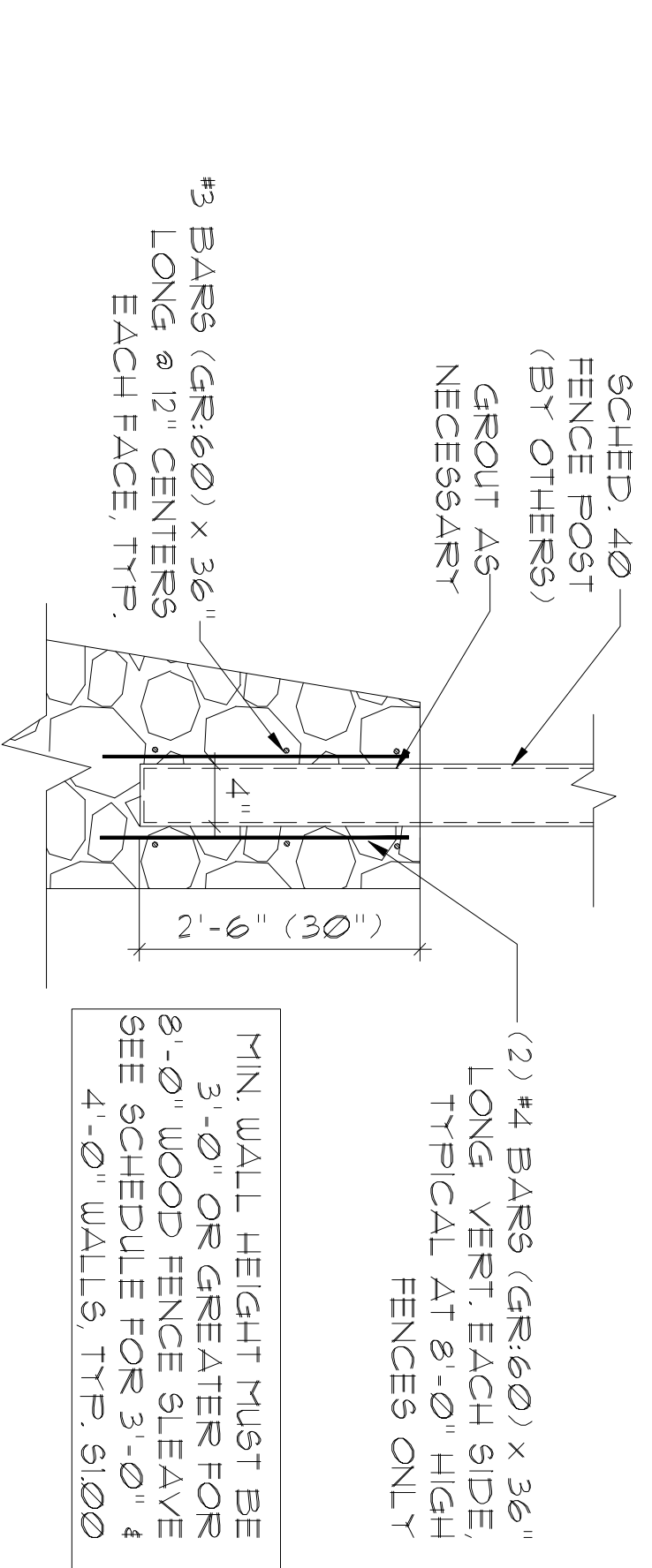
1. ALL WALLS SHALL BE PROVIDED WITH A STONE AND MORTAR LEVELING COURSE AT THE BASE.
  2. ALL WALLS SHALL BE BEDDED IN FIRM IN-SITU OR COMPACTED FILL TO THE MINIMUM DEPTH SPECIFIED ON THE PLAN.
- INSPECTION REQUIREMENTS**

1. BY OR UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER EXPERIENCED IN RETAINING WALL DESIGN AND CONSTRUCTION.
2. FOOTING WIDTH AND EMBEDMENT
3. DRAIN INSTALLATION
4. CONTROL JOINT LOCATIONS
5. INSPECTION IS PERFORMED ONLY TO DEVELOP A GENERAL OPINION REGARDING THE BUILDER'S COMPLIANCE WITH PROJECT SPECIFICATIONS. NO WARRANTY OR GUARANTEE IS PROVIDED.

**EMBED DEPTH NOTES:**

IN AREAS WHERE THE SLOPE BELOW THE WALL IS GREATER THAN OR EQUAL TO 3:1 THE MINIMUM EMBED DEPTH SHALL BE 3'-0"

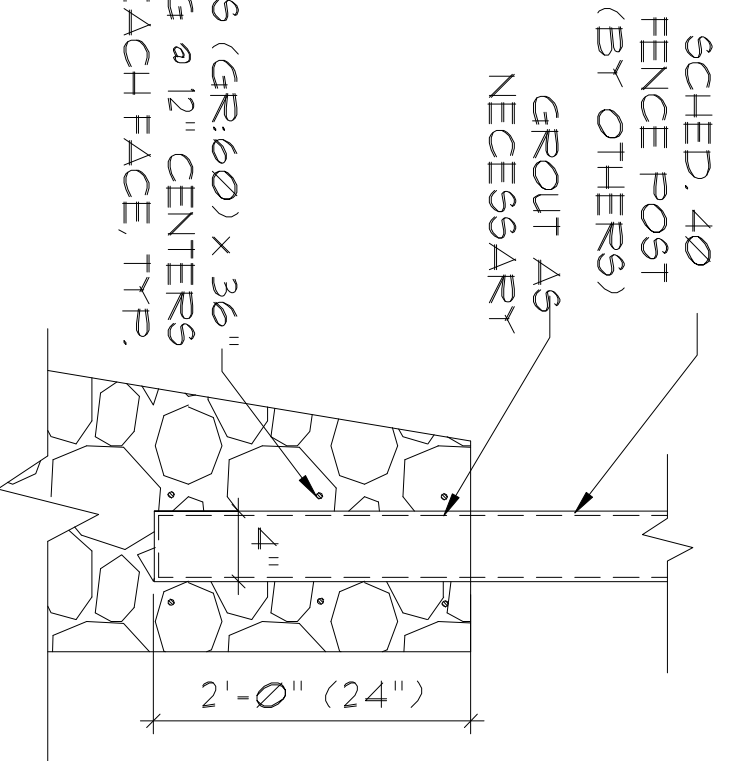
IN AREAS WHERE THE FRONT OF THE WALL IS ADJACENT TO A POND OR SIMILAR BODY OF WATER THE MINIMUM EMBED DEPTH SHALL BE INCREASED BY 1'-4" TO THE SCHEDULED EMBED DEPTH ABOVE.



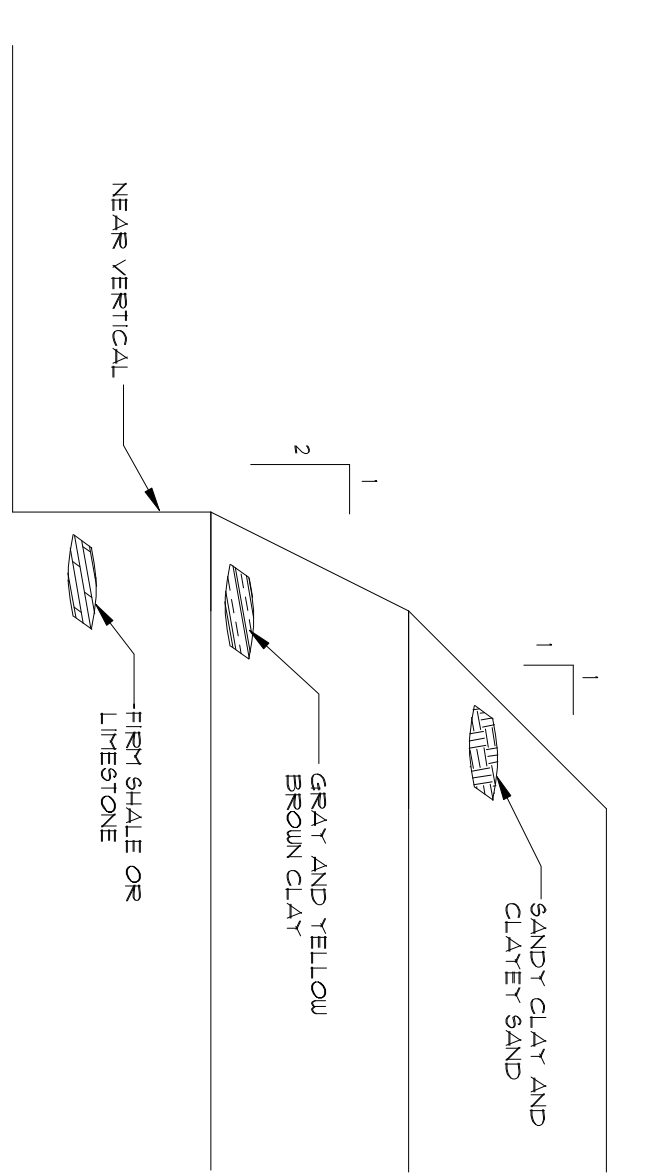
**FENCE POST EMBED DETAIL - 8'-0" WOOD FENCE**

WALL SCHEDULE (8' FENCE)	
HEIGHT (H)	N/A N/A 3' 4'
BASE WIDTH (B)	N/A N/A 25" 21"
TOP WIDTH (T)	N/A N/A 12" 12"
EMBEDMENT (E)	N/A N/A 10" 12"
TOE WIDTH (TW)	N/A N/A 5" 7"

USE THE SCHEDULE ABOVE ONLY WHEN 8'-0" HIGH BOARD-ON-BOARD FENCE POSTS ARE EMBEDDED IN FOOTINGS BETWEEN 3'-0" & 4'-0" IN HEIGHT. USE STRONG FLOORING THAT ALL 8'-0" HIGH FENCE POSTS BE PLACED OUTSIDE OF THE AREA OR PLACED INTO STANDARD CONCRETE POST PILES PRIOR TO THE CONSTRUCTION OF THE RETAINING WALL FOR RETAINING WALLS WITH HEIGHT LESS THAN 3'-0". 8'-0" HIGH BOARD-ON-BOARD FENCE POSTS ARE NOT ALLOWED.



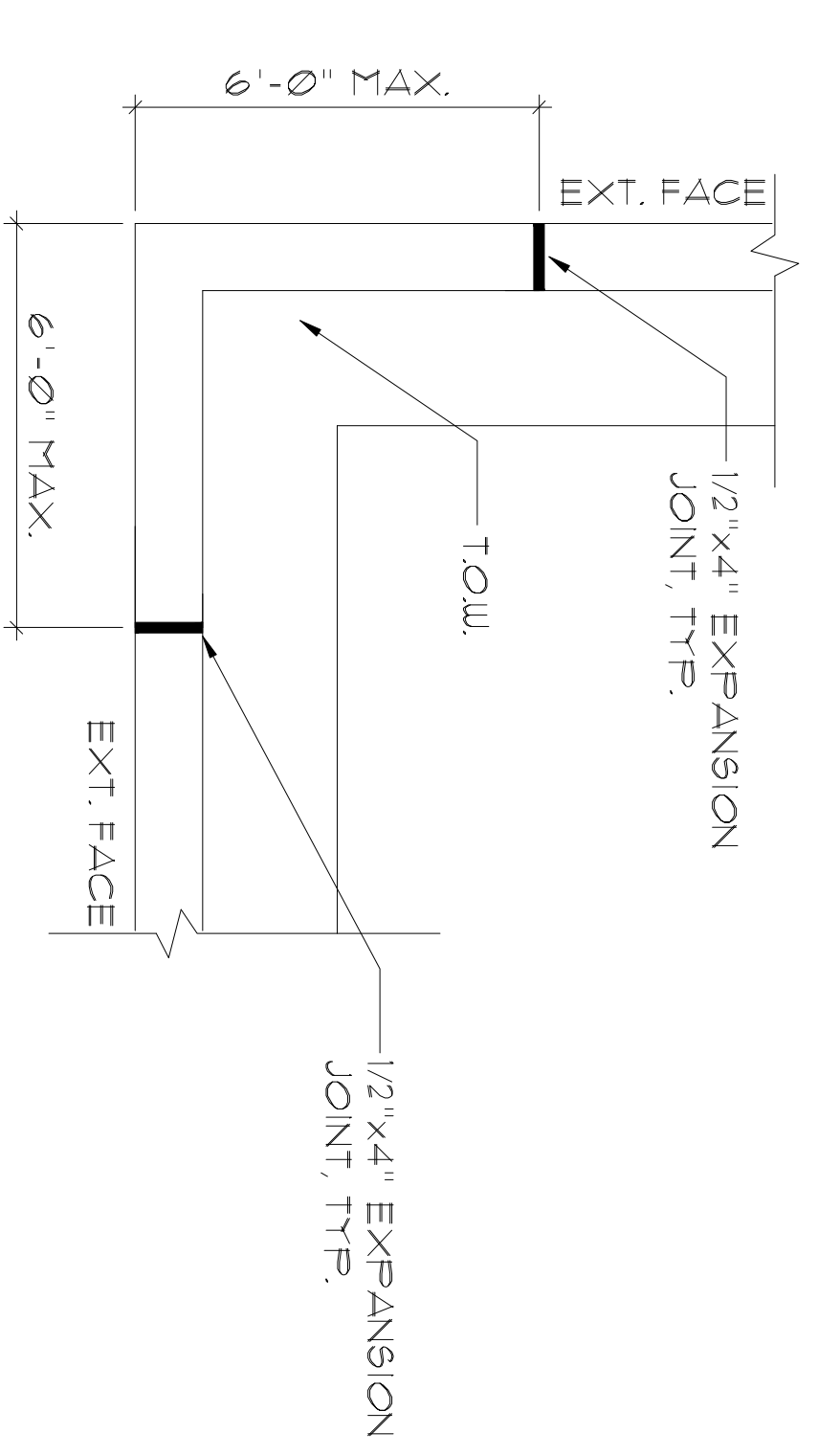
**FENCE POST EMBED DETAIL - 6'-0" WOOD FENCE**



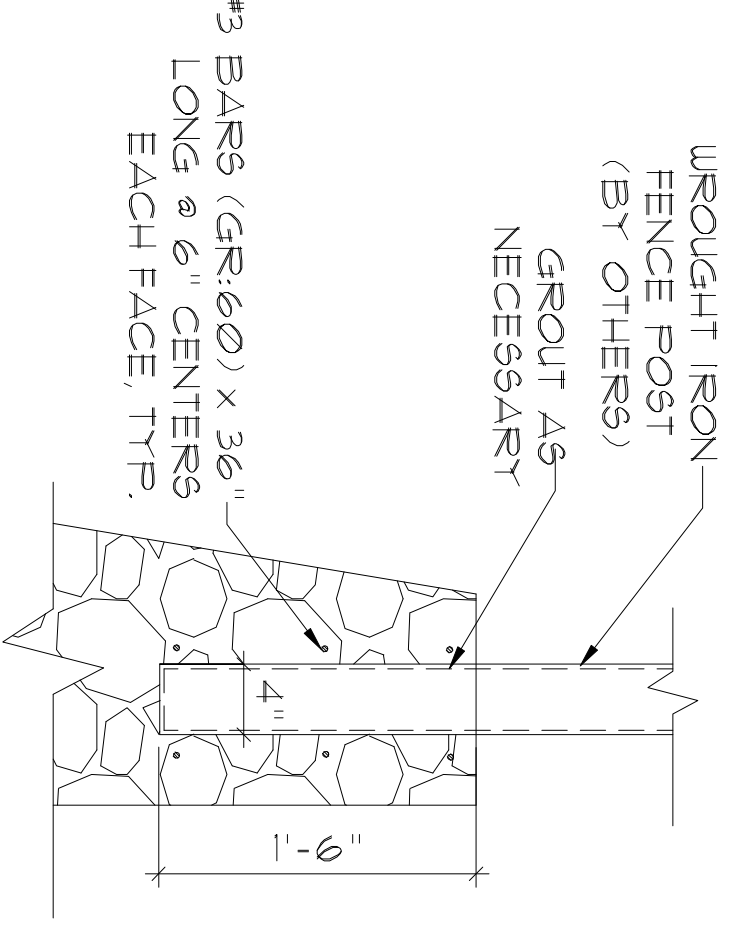
**SLOPE AND BENCHING DIAGRAM - SIMPLE SLOPE**

**NOTES:**

1. NO EQUIPMENT OR SPILL CLOSER THAN 3'-0" OR ONE-HALF THE DEPTH OF EXCAVATION, WHICHEVER IS GREATER, TO TOP OF SLOPE.
2. ASSUMES ABSENCE OF GROUNDWATER. SEEPAGE CAN REQUIRE ADJUSTMENTS IN SLOPE ANGLES AND/OR DEWATERING.
3. PRIOR TO CONSTRUCTION DAILY OBSERVATIONS OF SLOPE STABILITY REQUIRED. IF QUESTIONS OR CONCERNS REGARDING SLOPE STABILITY ARISE CONTACT THE STRUCTURES.



**EXPANSION DETAIL AT CORNERS**



**FENCE POST EMBED DETAIL - WROUGHT IRON**

REVISIONS

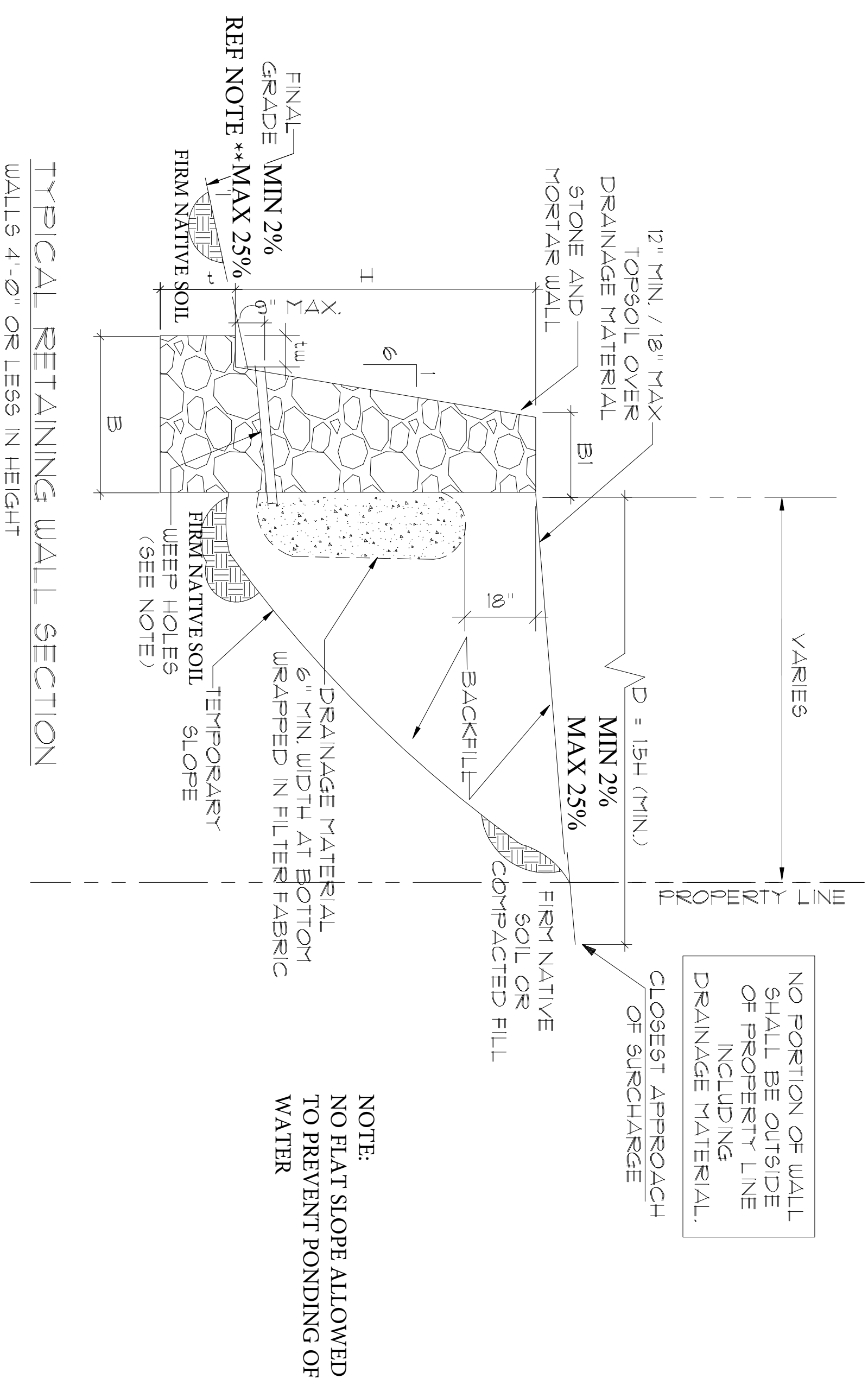
THE ENGINEERS SEAL ON THIS PLAN WAS ELECTRONICALLY AFFIXED BY LOKI KOTTKAMP REGISTRATION No. 93691 ON MAY 17, 2018.

**B&E STRUCTURES**  
CONSULTING ENGINEERS  
TX FIRM REG. #F-870

1010 E. ARAPHO ROAD, SUITE 106  
RICHARDSON, TX 75081 214-741-3095

**WILDWOOD DEVELOPMENT**  
INTERSTATE WIRE  
ROCKWALL, TEXAS  
PLAN: STANDARD RW NOTES AND DETAILS  
2635 OBSERVATION TRAIL

JOB # 240520-1  
DATE 05/17/18  
DRAWN BY  
CHECKED BY  
RECORD DRAWINGS  
SHEET \$1.00



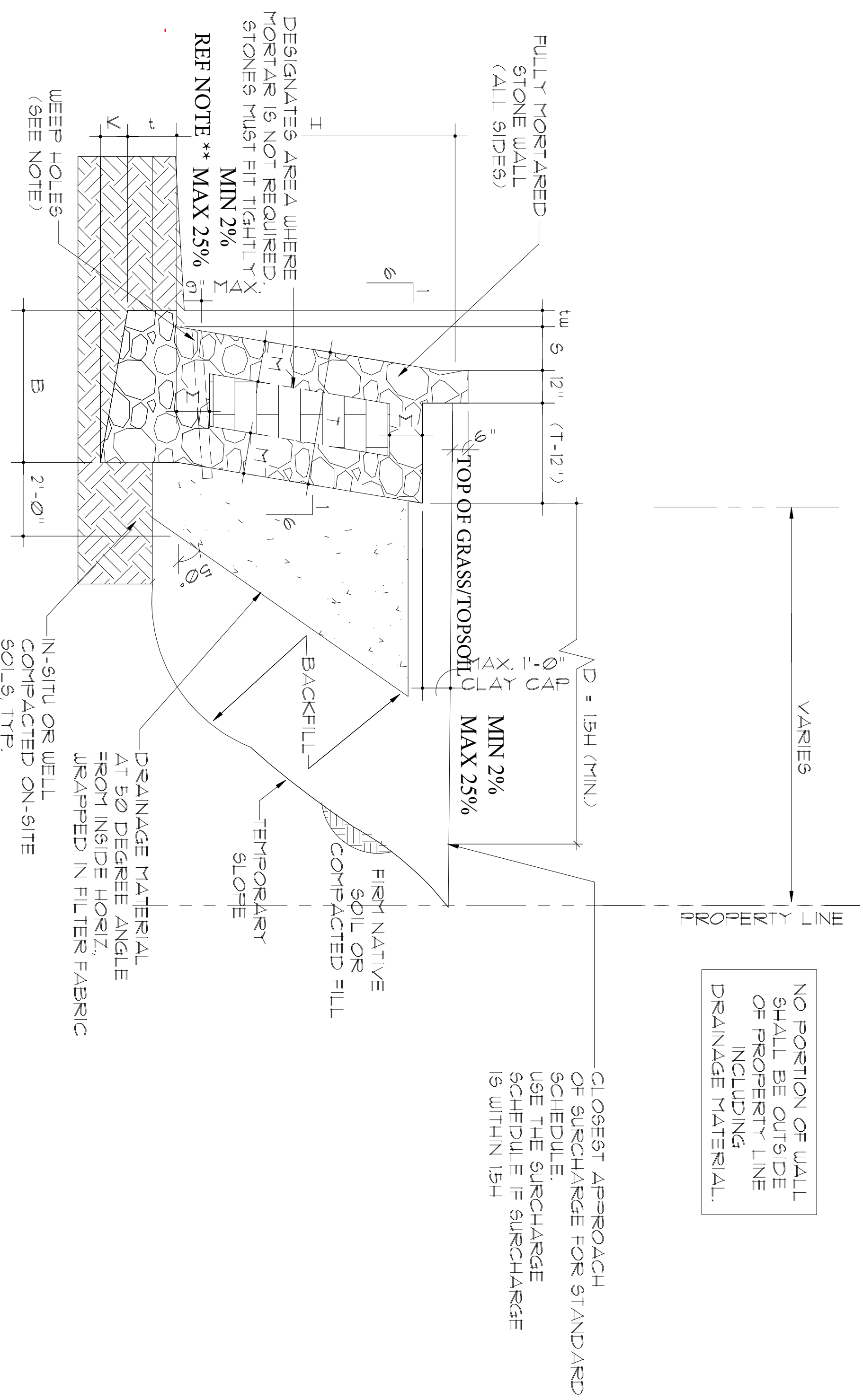
NOTE:  
NO FLAT SLOPE ALLOWED TO PREVENT PONDING OF WATER

TYPICAL RETAINING WALL SECTION  
WALLS 4'-0" OR LESS IN HEIGHT

NOTE \*\* FOR GRADING, REFERENCE APPROVED GRADING PLAN C2-1

SOUTH WALL & PORTIONS OF OBSERVATION TRAIL & PORTIONS OF EAST WALL (TYPE A WALL)

WALL SCHEDULE					
HEIGHT (H)	15'	2'	3'	4'	
BASE WIDTH (B)	15"	16"	22"	25"	
TOP WIDTH (BT)	12"	12"	12"	12"	
EMBEDMENT (E)	12"	12"	12"	12"	
TOE WIDTH (TW)	0"	0"	2"	5"	



NOTE \*\* FOR GRADING, REFERENCE APPROVED GRADING PLAN C2-1

NORTH WALLS AT BOTH OBSERVATION TRAIL WALLS (TYPE B WALL)

TYPICAL RETAINING WALL SECTION  
WALLS 5'-0" to 9'-0" IN HEIGHT

WALL SCHEDULE - STANDARD										
HEIGHT (H)	5'	6'	7'	8'	9'					
BASE WIDTH (B)	21"	30"	35"	41"	46"					
WALL THKNS (T)	23"	21"	31"	36"	40"					
EMBEDMENT (E)	12"	12"	15"	18"	18"					
MORTAR THICKNESS (M)	8"	10"	10"	12"	14"					
BATTER WIDTH (S)	10"	12"	14"	16"	18"					
KEY DEPTH (K)	5"	6"	7"	8"	8"					
TOE WIDTH (TW)	2"	3"	4"	5"	6"					
ALLOWABLE BEARING PRESSURE	1500 PSF									

RECORD DRAWINGS

JOB \*\*  
240520-1  
DATE  
05/17/18  
DRAWN BY  
CHECKED BY  
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S1.01

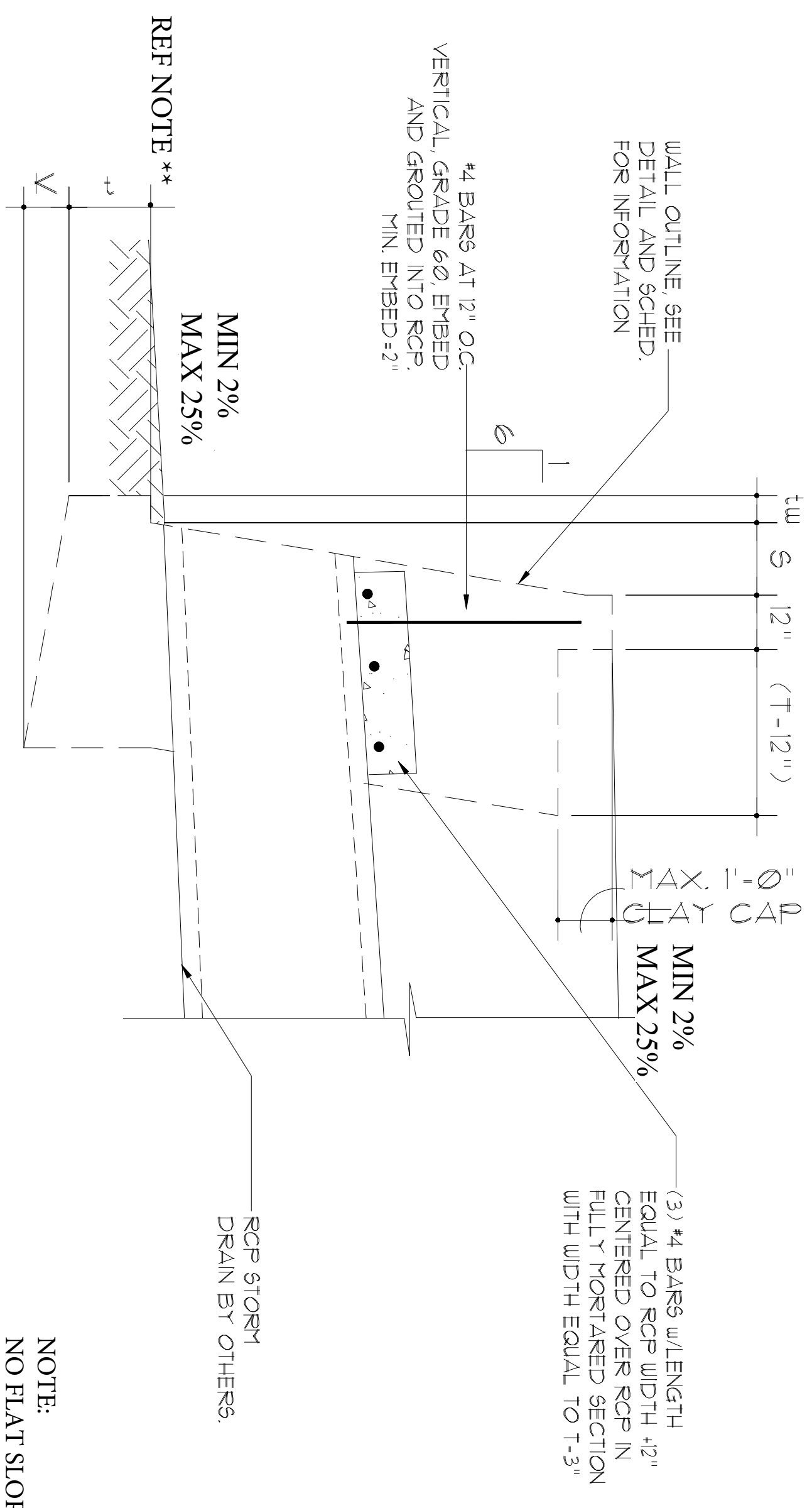
WILDWOOD DEVELOPMENT  
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RICHARDSON, TX 75081 214-741-3095

STATE OF TEXAS  
LOKI KOTTIKAMP  
93691  
LICENSED PROFESSIONAL ENGINEER

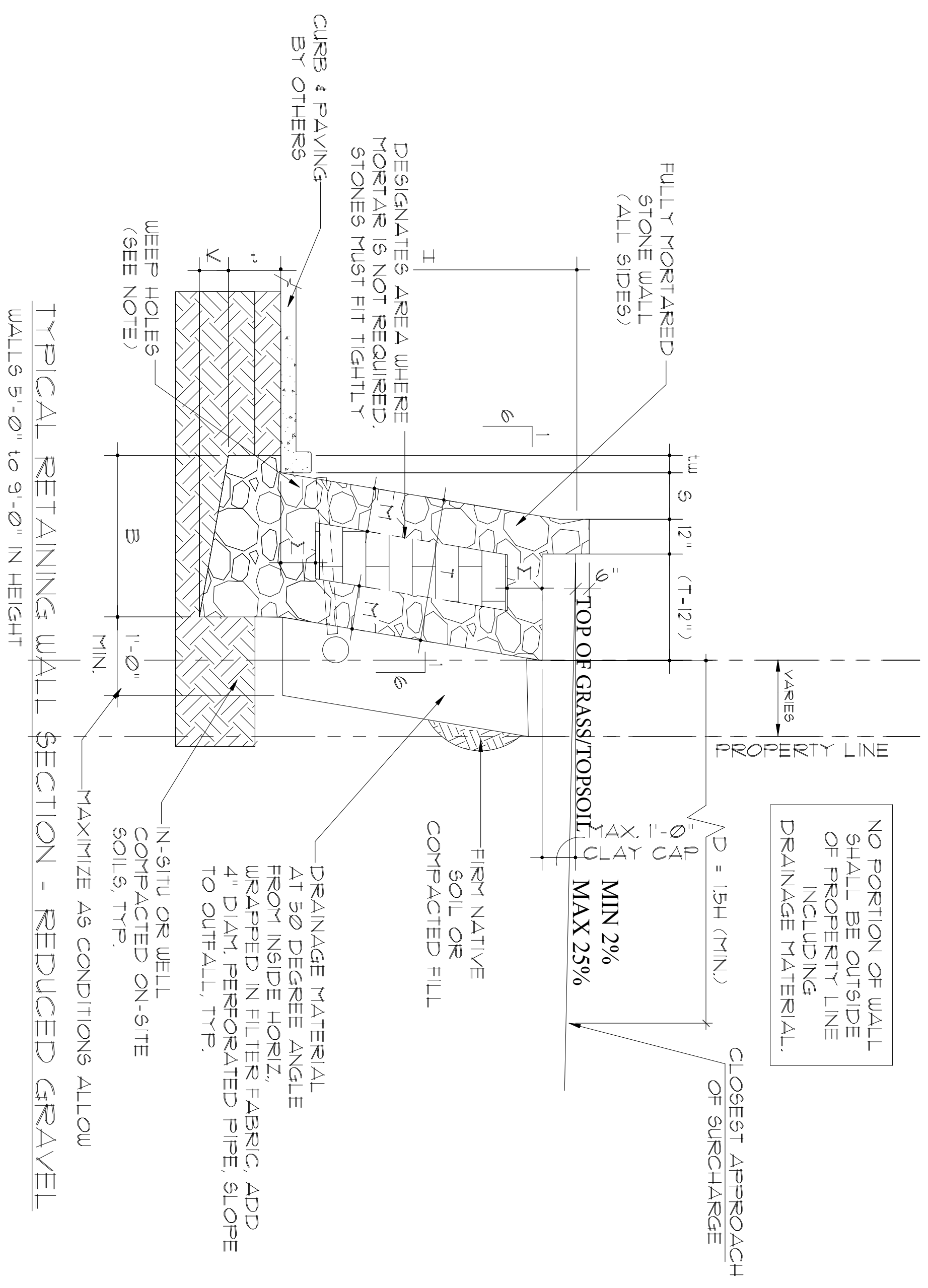
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REVISIONS



NOTE: NO FLAT SLOPE ALLOWED TO PREVENT PONDING OF WATER

SECTION AT RCP



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SECTION AT RCP

WALL SCHEDULE - ALLOWABLE BRG. PRESSURE = 1500 PSF

HEIGHT (H)	5'	6'	7'	8'	9'
BASE WIDTH (B)	32.5"	36"	42"	49"	55"
WALL THICK (T)	21.5"	25.5"	31"	43"	48"
EMBEDMENT (E)	14.5"	14.5"	18"	21.5"	21.5"
MORTAR THICKNESS (M)	9.5"	12"	12"	14.5"	17"
BATTER WIDTH (S)	10"	12"	14"	16"	18"
KEY DEPTH (K)	6"	12.5"	8.5"	10"	10"
TOE WIDTH (TW)	2.5"	3.5"	5"	6"	7"

RECORD DRAWINGS

JOB # 240520-1  
 DATE 05/17/18  
 DRAWN BY  
 CHECKED BY

SHEET S1.02

WILDWOOD DEVELOPMENT  
 INTERSTATE WIRE  
 ROCKWALL, TEXAS  
 PLAN: STANDARD RW NOTES AND DETAILS  
 2635 OBSERVATION TRAIL

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