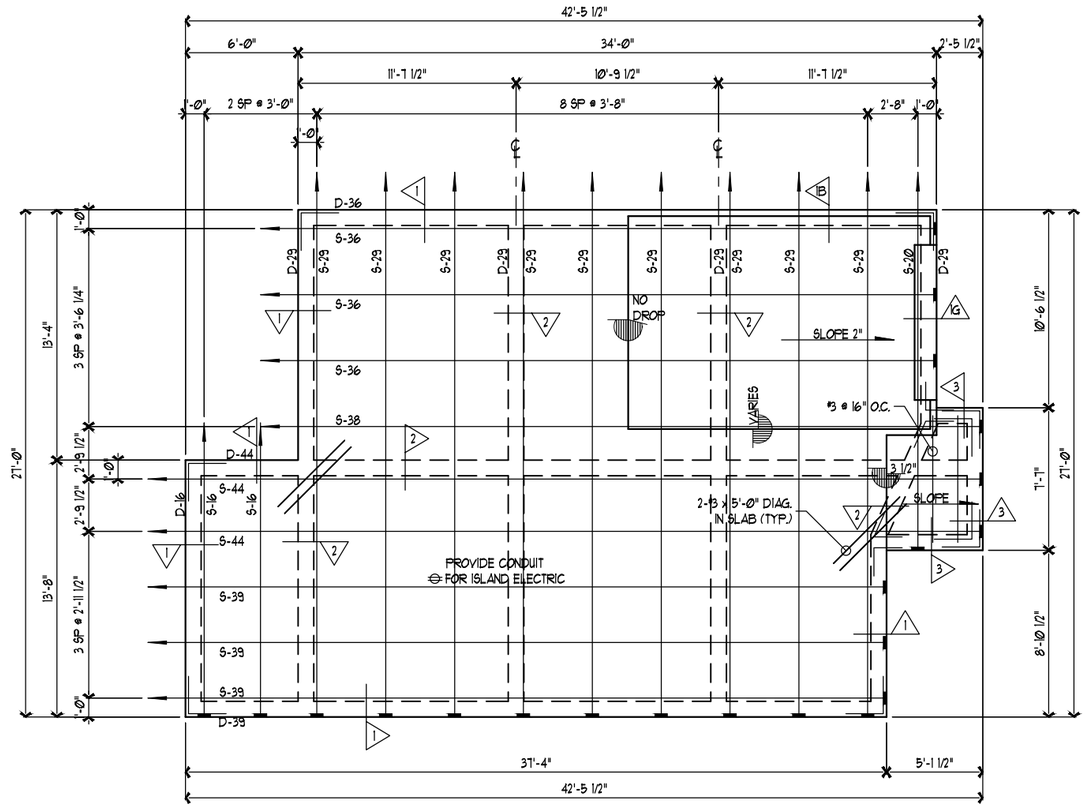

THIS FOUNDATION ASSUMES LEVEL SITE CONDITIONS. IF UNDERSLAB FORMING FILL AND/OR UNAPPROVED FILL DEPTH EXCEEDS 60" CONTACT ENGINEER FOR REDESIGN. (SEE HARD POINT NOTE ON SHT. 2). VERIFY ALL DIMENSIONS WITH ARCHITECTURALS. DO NOT USE THESE PLANS FOR SETTING FORMS.

NOTE:
PENETRATE ALL PERIMETER GRADE BEAMS 6" MIN. INTO APPROVED MATERIAL U.N.O. AND ENSURE DESIGN DEPTH IS ACHIEVED - REF. SHEET 2.

NOTE:
THIS IS A SCHEMATIC PLAN FOR THE PURPOSE OF LOCATING AND IDENTIFYING FOUNDATION REINFORCING ELEMENTS ONLY. VERIFY ALL DIMENSIONS, DROPS, OFFSETS AND FEATURES WITH THE ARCHITECTURAL PLANS BEFORE FORMING THE FOUNDATION. MLAW CANNOT BE HELD LIABLE FOR ANY CONTRACTOR OVERSIGHT IN THIS REGARD. DO NOT FORM FOUNDATION USING THESE PLANS. DIMENSIONAL CONTROL IS THE RESPONSIBILITY OF THE ARCHITECT. USE THESE PLANS FOR THE PLACEMENT OF THE GRADE BEAMS AND REINFORCEMENT

M·L·A·W ENGINEERS
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STATE OF TEXAS
MICHAEL RAY LYNCH
64928
LICENSED
PROFESSIONAL ENGINEER

08-24-2016

☐ FILL UNAPPROVED ON THIS SITE

☒ FILL APPROVED ON THIS SITE

LEGEND

- TYPICAL SECTION (SEE DETAIL SHEET)
- NO DRAPED CABLE
- HARD POINT (SEE NOTE 6-4)

ESTIMATES

Slab Square Footage:	995
Estimated Concrete Volume:	28
Linear Feet of Cable:	915
No. of Beam Cables:	8
No. of Slab Cables:	21

WJP CONSTRUCTION SERVICES

Job No: 1616041005.009
2701 ACOPIO BEND
WESTGATE GROVE
City: AUSTIN
Section: Phase:
Lot: 25 Block:
Plan #: 1607 AR
Date: 8/23/2016 Drawn: JJK
Revision: Check:

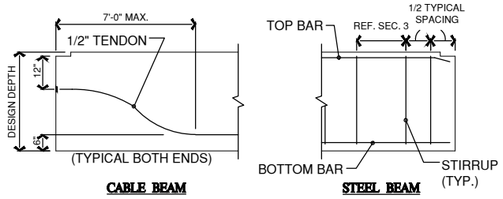
INSPECTIONS

INSPECTION	DATE	BY	P/F
FILL/BEAM			
PREPOUR			
REINSPECT			
REINSPECT			
CONCRETE			
CONCRETE			
STRESSING			
RESTRESS			

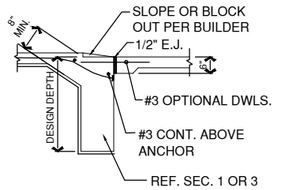
FOUNDATION PLAN

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

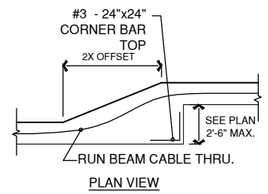
S1 OF 2



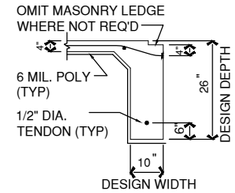
TYPICAL BEAM (SIDE VIEW)



GARAGE APRON - (G)

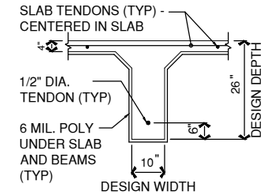


SECTION - (K)

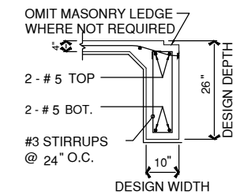


SECTION - (1)

FOR EXTERIOR BEAMS WITH EXTERIOR EXPOSURE ABOVE FINAL GRADE GREATER THAN 6'-0" SEE "DEEP BEAM DETAIL" FOR REINFORCEMENT AND PLACEMENT OF WEEPS.

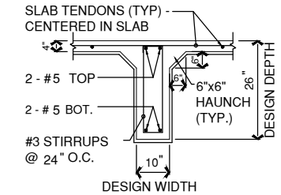


SECTION - (2)

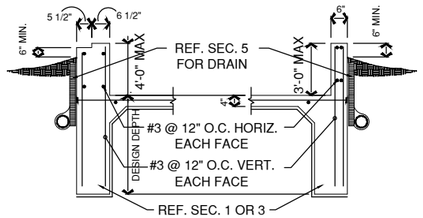


SECTION - (3)

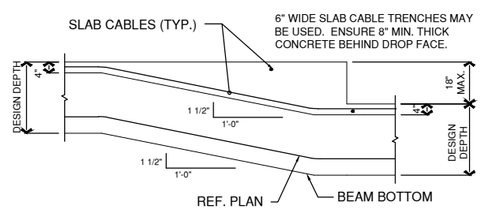
FOR EXTERIOR BEAMS WITH EXTERIOR EXPOSURE ABOVE FINAL GRADE GREATER THAN 6'-0" SEE "DEEP BEAM DETAIL" FOR REINFORCEMENT AND PLACEMENT OF WEEPS.



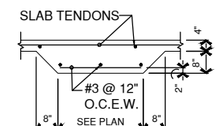
SECTION - (4)



(1C) - HEIGHTENED CURB - (1D)

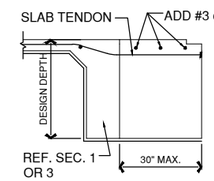


TYPICAL DROP IN SLAB TO 18 INCHES

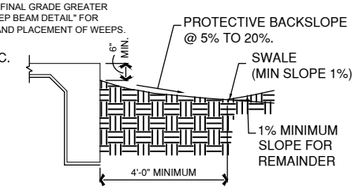


IF F.P. FOOTING IS NOT SHOWN ON PLAN THEN EITHER NO FIREPLACE OR A METAL FIREBOX IS ASSUMED.

INT. F.P. FTG. - (6)

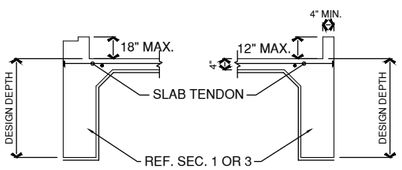


CANTILEVERED FTG. - (7)

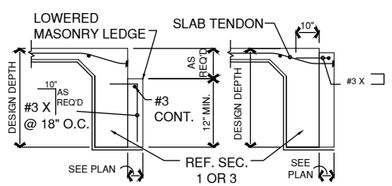


THIS PROTECTIVE BACKSLOPE DETAIL IS TO BE USED AROUND ENTIRE SLAB ONLY IF DRAINAGE DESIGN IS NOT PERFORMED BY A TEXAS REGISTERED PROFESSIONAL ENGINEER.

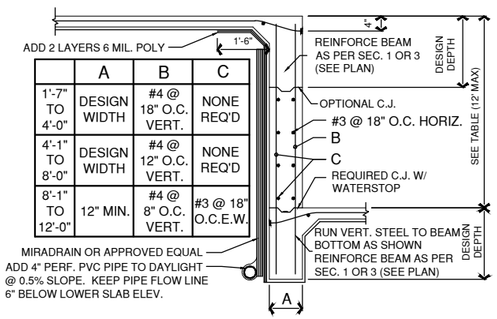
PROTECTIVE BACK SLOPES



(1A) - STANDARD CURB - (1B)



(E) - EXTENDED BRICK LEDGE - (F)

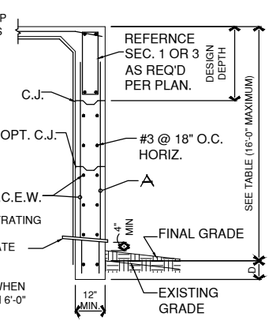


	A	B	C
1'-7" TO 4'-0"	DESIGN WIDTH	#4 @ 18" O.C. VERT.	NONE REQ'D
4'-1" TO 8'-0"	DESIGN WIDTH	#4 @ 12" O.C. VERT.	NONE REQ'D
8'-1" TO 12'-0"	12" MIN.	#4 @ 8" O.C. VERT.	#3 @ 18" O.C.E.W.

DROP IN SLAB 19 INCHES TO 12 FEET - (5)

BUILDER MAY ADD #3 VERT. TO HELP SUPPORT "BEAM CAGE" FOR BEAMS LESS THAN 6'-0" ABOVE GRADE.

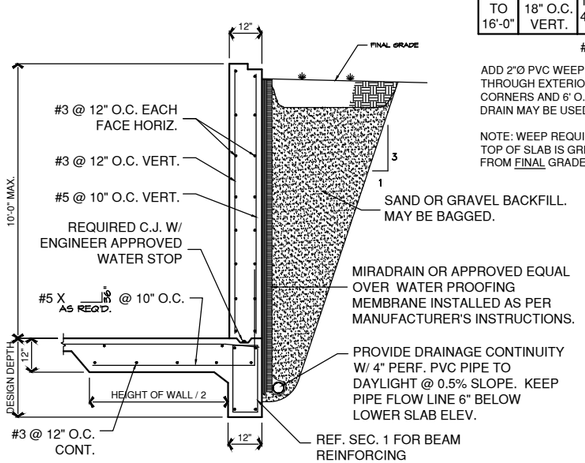
	A	D
6'-0" TO 12'-0"	#4 @ 12" O.C. VERT.	12" SOIL 2" ROCK
12'-1" TO 16'-0"	#6 @ 18" O.C. VERT.	16" SOIL 4" ROCK



ADD 2"Ø PVC WEEP PIPE PENETRATING THROUGH EXTERIOR BEAM AT CORNERS AND 6' O.C. ALTERNATE DRAIN MAY BE USED.

NOTE: WEEP REQUIRED ONLY WHEN TOP OF SLAB IS GREATER THAN 6'-0" FROM FINAL GRADE.

DEEP BEAM 6 TO 16 FEET



RETAINING WALL ON SLAB DETAIL

DEEP BEAM AND SECTION 6 RECOMMENDATIONS (NOT REQUIRED):

1. FORMING FILL BEHIND DROP IN SLAB OR DEEP BEAM OVER 4 FEET HIGH TO BE RETAINED BY 16" WIDE FILL BAGS OF WOVEN PLASTIC AND FILLED WITH CRUSHED STONE OR WASHED GRAVEL. FOR HEIGHTS OVER 8 FEET, USE TWO ROWS OF BAGS FULL HEIGHT.
2. STIRRUPS MAY BE USED I.L.O. VERT. REINFORCING, SIZE AND SPACING PER "C" CATEGORY ON CHART.

NOTES

1-0. GENERAL

1-1. Engineer's inspection required for: concrete pre-pour setup AND final stressing of tendons Engineer's inspection recommended (not required) for: concrete placement/testing.

1-2. Tendon lengths and count and concrete quantity estimate on plan are for estimating purposes only. Contractor should verify all tendon lengths and concrete quantity prior to installation. Concrete quantity must be adjusted for sloping site and forming irregularities. Concrete quantities are not exact. Draped tendons are not shown, U.N.O., for plan clarity.

1-3. Plan shows the location of structural reinforcement, beam depth and beam locations only. Architectural dimensions must be compared to the architectural plans prior to construction of forms. Report any discrepancies to the Engineer. The forms should be built using the architectural plans--not the Engineer's plan. Do not scale plan.

1-4. This design is in accordance with the Criteria for Selection and Design of Residential Slabs-on-Ground: BRAB No. 33, WRI/CRSI-81 Design of Slab-on-Ground Foundations or PTI Design of Post-Tensioned Slabs-on-Ground 3rd Edition, The 2009 and 2015 International Residential Code, and Standard Building Code and recognized Engineering practices.

1-5. These plans are copyright MLAW as of the year dated.

1-6. Vertical control joints should be used in exterior masonry to the full height spaced approximately 25 feet apart. A joint should be located directly above all slab control joints.

2-0. SITE PREPARATION

2-1. All site work shall be performed in accordance with FHA Data Sheet 79-G. Refer to notes concerning "approved" and "unapproved" fill.

2-2. All underslab "Forming Fill" shall have a P.I. less than 20 and be free of organics.

3-0. CONCRETE

3-1. Concrete shall have a minimum compressive strength of 3000 psi at 28 days. Concrete should be minimum 2000 psi at full tendon stressing. All concrete work shall meet A.C.I 318. Concrete shall be deposited in forms no later than two hours after water is mixed at the plant. One addition of water will be permitted at the job site to adjust the slump to a maximum of 6 inches.

3-2. Concrete shall be well consolidated using proper mechanical vibration, especially in the vicinity of the tendon anchorage.

3-3. Piping, conduit and electrical lines:

a. **1" and smaller conduit** - If conduit in slab is required prior to concrete placement, location to be verified in field. Plumbing and/or conduits smaller than 1" diameter do not have to be trenched into the underslab fill material. The current standard of practice shall remain and these plumbing/conduit may be run as necessary to achieve the desired architectural goal.

b. **1" to 2" max diameter conduit** - conduit of this size should be placed more carefully as to not interfere with parallel action of the tendons. We recommend in all cases possible that conduit this thick be placed at a 45 degree angle to the direction of the slab tendons or dropped into the top of a concrete grade beam. In cases where the conduit or piping is parallel to the slab tendons the tendons should be moved to create a minimum of 3 inches of separation between the tendon and the conduit. Conduit of this size should never be placed on top of the cables but should be below both sets of tendons.

c. **Greater than 2" conduit** - should be trenched into the underslab fill material.

3-4. If unanticipated interruptions in concrete placement occur, and concrete hardens, temporary forms must be used for setting of construction joints or concrete must be chipped to form vertical joints prior to setting additional slab. Use #3 X 24" dowels at 12" O.C. epoxied into existing concrete to bond old to new concrete.

4-0. CONCRETE COVERAGE

4-1. SLAB TENDONS: 1-1/2 inches above sub-grade in 4" thick slab and ANCHORS to have 4 inches vertical coverage from center of anchor to top of concrete.

4-2. Slab Tendons may be moved 12" max. horizontally to allow for plumbing box-outs. Beam Tendons may be moved 3" downward and/or 2" upward vertically for plumbing/conduit pipes in beams.

4-3. BEAM AND WALL STEEL: 1-1/2" slab, 2" formed, and 3" exposed to earth.

4-4. PIPE PENETRATIONS: 2" for tendon and rebar.

5-0. REINFORCING

5-1. All reinforcing bars shall be ASTM A-615 Grade 60, except Grade 40 may be used for stirrups, corner bars and hairpins.

5-2. All tendons shall be 270k grade, 7 wire strand, 1/2 inch diameter, U.N.O., greased and sheathed with a continuous extruded plastic sheathing.

5-3. Anchorage system shall be a monostrand unbonded tendon anchorage utilizing a cast wedge plate and a two piece wedge as manufactured by a P.T.I. approved manufacturer.

5-4. All post-tensioned tendons and anchors shall conform to the requirements of the latest "P.T.I. Guide Specifications For Post-Tensioning Materials." Post-tensioned tendon supplier to be P.T.I. factory certified.

5-5. PARTIAL STRESS all tendons to 13.3 kips (or half of final jacking force) 24 to 48 hours after concrete placement.

5-6. FULL STRESSING of all tendons to 33 kips 7 to 10 days after concrete placement.

5-7. The first tendon in the slab shall be a maximum of 14 inches and a minimum of 6 inches from the outside form. Tendons not dimensioned on plan to be equally spaced.

5-8. (1) #3 x 24 inches x 24 inches corner bar required at all exterior corner's top for beams reinforced with cables OR 24"x24" corner bars equal to steel beam size and spacing if beam is steel reinforced. Deepened beams to have corner bars with diameter equal to horizontal steel at each horizontal bar.

5-9. At plumbing stacks, add #3 bars x size of opening plus 16 inches to be placed in concrete 2 inches beyond perimeter of opening (not req'd. if cables are partial stressed - see note 5-5).

6-0. PLAN VARIATIONS

6-1. All depth dimensions of beams are minimum unless intact rock is encountered at less depth. Inspector may approve beams continuously on rock to minimum beam depth of 12 inches.

6-2. Should conditions arise that are not covered by details on this plan, contact Engineer at once for additional instructions.

6-3. In areas to receive tile, we recommend installing 6x6x1.4x1.4 WWF 1-1/2" below concrete surface and bedding the tile on a bond breaker to prevent shrinkage cracks from reflecting through the tile.

6-4. HARD POINTS - If the depth of underslab clean fill at any beam intersection (total depth, not from beam bottom), exceeds 60 inches SANDY LOAM or 84 inches ROAD BASE, place hard points through the fill and 6" into virgin soil. Use of 12 inch diameter pre-formed or drilled, concrete piers. And all beams to have tendons or steel. (If hardpoint depth exceeds 6'-0" from top of slab reinforce w/ (4)-#4 vert. & #3 ties @ 24" O.C.)

7-0. TREE POLICY- APPLIES TO P.I.'S = 38 AND GREATER

PRE-POUR

7-1. TREE WITHIN 5 FEET FROM FOUNDATION:
a. Add 20'-0" of section 3 steel - center on tree in exterior beam only, OR
b. Deepen beam 24" into existing soil for 20'-0" - exterior beam only.

7-2. TREE 5 TO 15 FEET FROM FOUNDATION:
a. Add 20'-0" of section 3 steel - center on tree in exterior beam only, OR
b. Deepen beam 12" into exsting soil for 20'-0" - exterior beam only.

POST-POUR

7-3. Add 6" wide trench 24" into existing grade 20'-0" long centered on tree and filled with un-reinforced concrete.

8-0. DRAINAGE

8-1. This foundation plan is intended to work in conjunction with the grading and drainage sections for slabs on grade in the currently adopted edition of the International Residence Code. Drainage of surficial water away from the foundation is essential for the best foundation performance. Gutters are excellent options to keep water out of planters and to control the large volumes of water that come off valleys. Gutters and downspouts ensure that water can be transported out of trapped areas and prevent erosion and large dips in the yard that hold water.

OPTIONAL PROVISIONS TO BE ENFORCED, IF CHECKED:

☐ FILL (UNAPPROVED). The fill material on this site is unsuitable to support a slab-on-ground foundation. The fill must be penetrated by all grade beams and extend a minimum of 6 inches into virgin soil. As an alternative, see HARD POINTS note. Based on the soils investigation, unapproved fill appears to be approximately deep.

☒ FILL (APPROVED). The fill material is acceptable to support a slab-on-ground foundation. Construct exterior grade beams 6 inches into approved fill. "Approved Fill" is fill that has been approved by MLAW, based on proper exploration, testing, or inspection by an agency acceptable to MLAW.

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STATE OF TEXAS
MICHAEL RAY LYNCH
64928
LICENSED PROFESSIONAL ENGINEER

PE
08-24-2016

SOIL DATA

PTI SOIL PARAMETERS

	CENTER	EDGE
EM:	7.2	3.7
YM:	1.5	2.8

BEARING CAPACITY: 2000 PSF

SOURCE: MLA LABS

DATE: 6-2014

DESIGN P.I.: 38F

WJP CONSTRUCTION SERVICES

Job No: 1616041005.009

2701 ACOPIO BEND
WESTGATE GROVE

City: AUSTIN

Section: Phase:

Lot: 25 Block:

Plan #: 1607 AR

Date: 8/23/2016 Drawn: JJK

Revision: Check:

STRESSING CHART

ELONGATION VALUES

CABLE LENGTH	ELONGATION	CABLE LENGTH	ELONGATION
15'-18'	1"	79'-84'	6 1/2"
19'-24'	1 1/2"	85'-90"	7"
25'-30'	2"	91'-96'	7 1/2"
31'-35'	2 1/2"	97'-103'	8"
36'-41'	3"	104'-109'	8 1/2"
42'-47'	3 1/2"	110'-115'	9"
48'-53'	4"	116'-122'	9 1/2"
54'-59'	4 1/2"	123'-128'	10"
60'-65'	5"	129'-135'	10 1/2"
66'-71'	5 1/2"	136'-142'	11"
72'-78'	6"	143'-148'	11 1/2"

FOUNDATION DETAILS

S2 OF 2