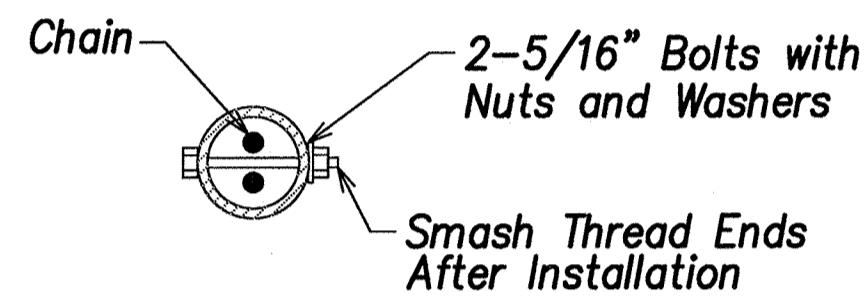
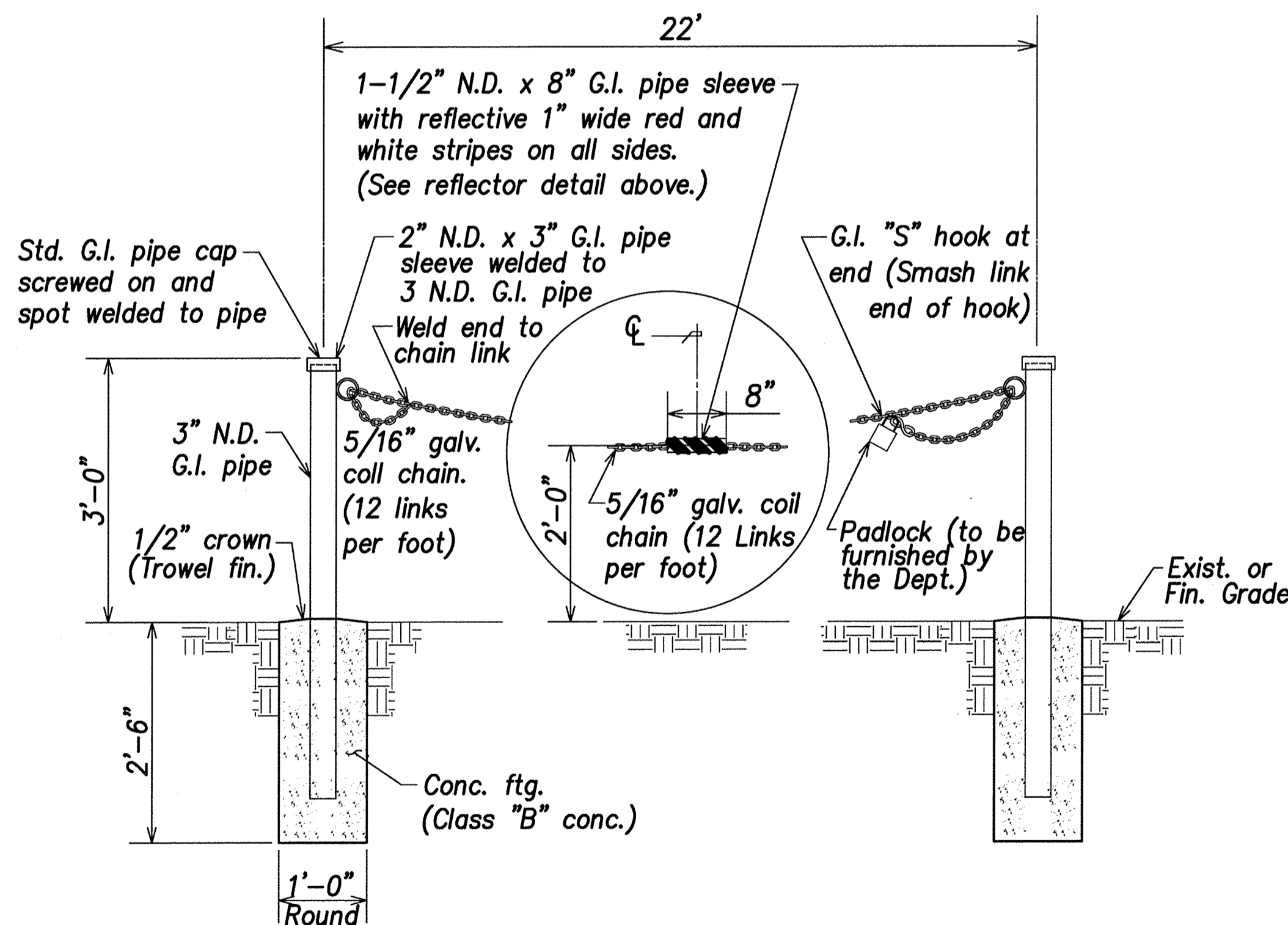


Note:  
See DOT Std. Plan D-15 For Jointing Details

**Concrete Sidewalk**  
Not to Scale



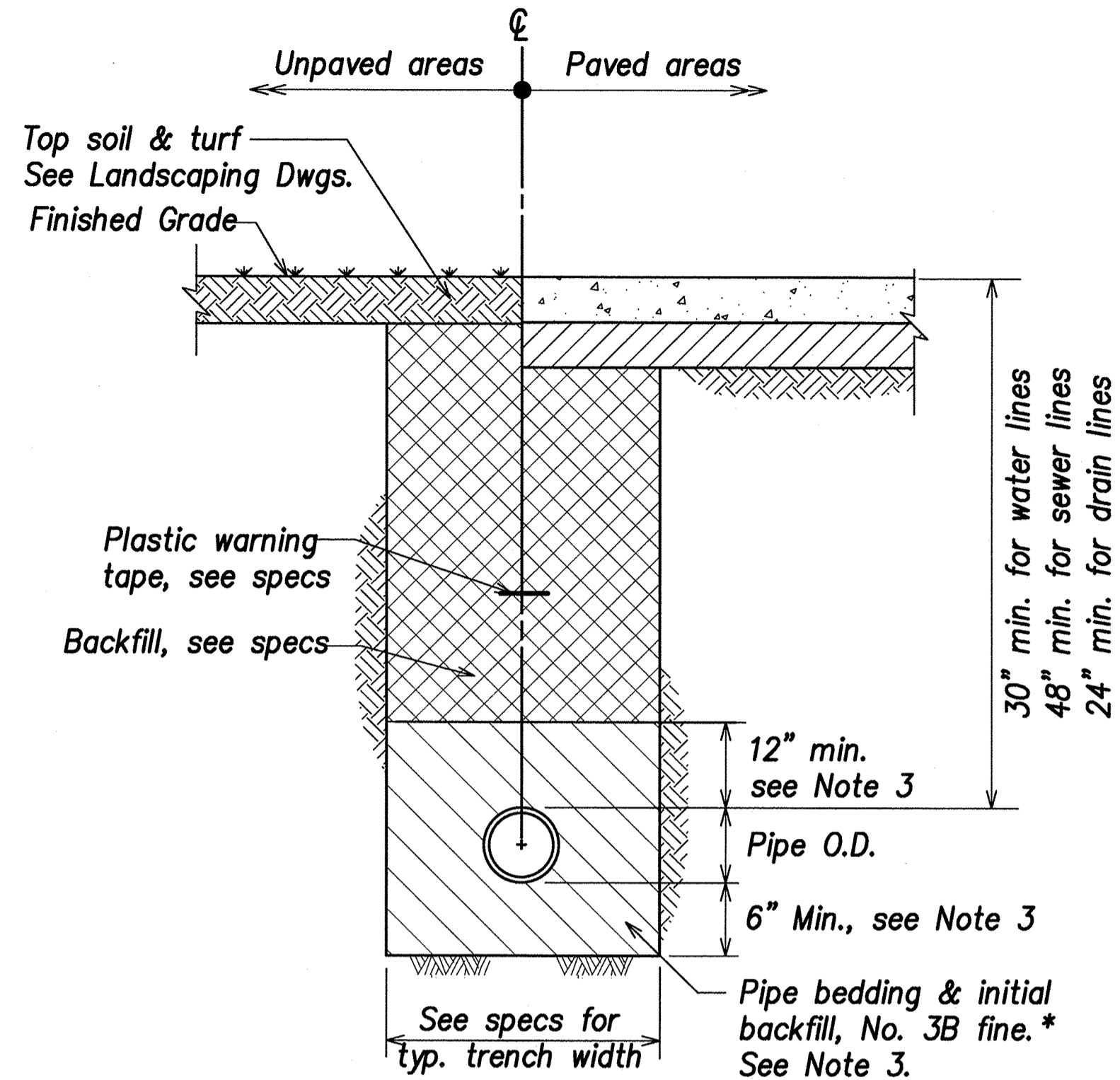
**REFLECTOR DETAIL**



**NOTES:**

1. All welded connections shall be painted with two coats of Z.R.C. cold galvanizing compound.
2. "S" hooks shall be 5/16 inch diameter with tip tapered to 3/16 inch.
3. No splicing shall be allowed on G.I. pipe posts.
4. All pipe sizes are nominal diameter (N.D.).

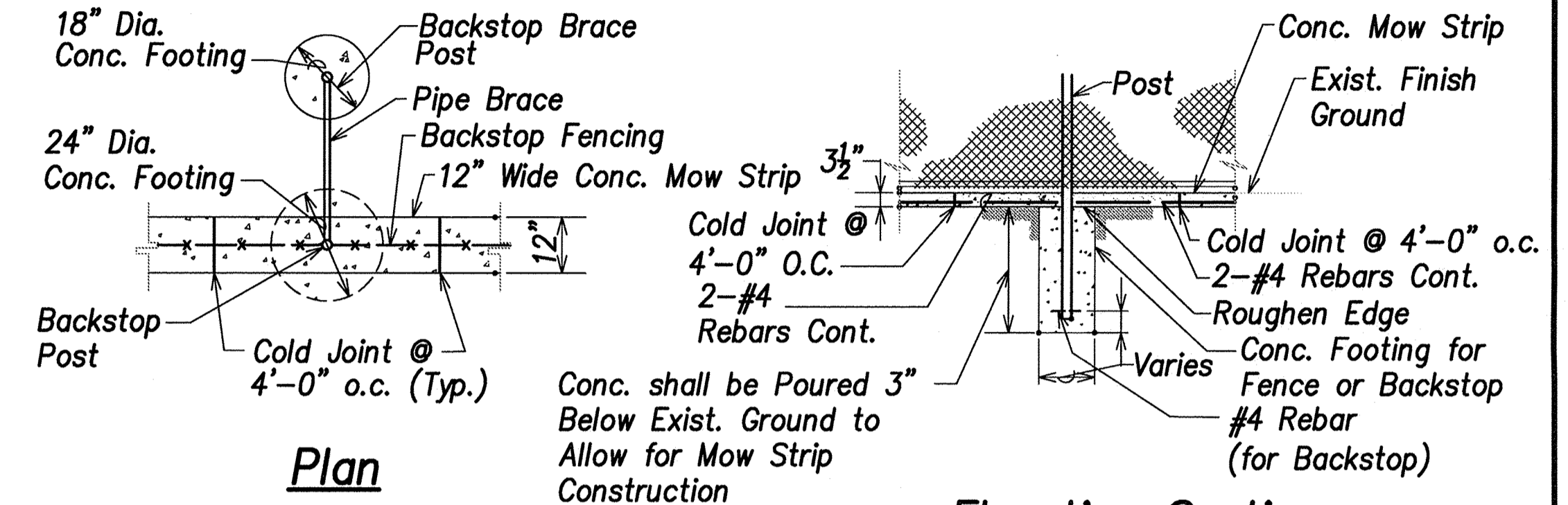
**Access Chain Barrier Detail**  
Not to Scale



**Notes:**

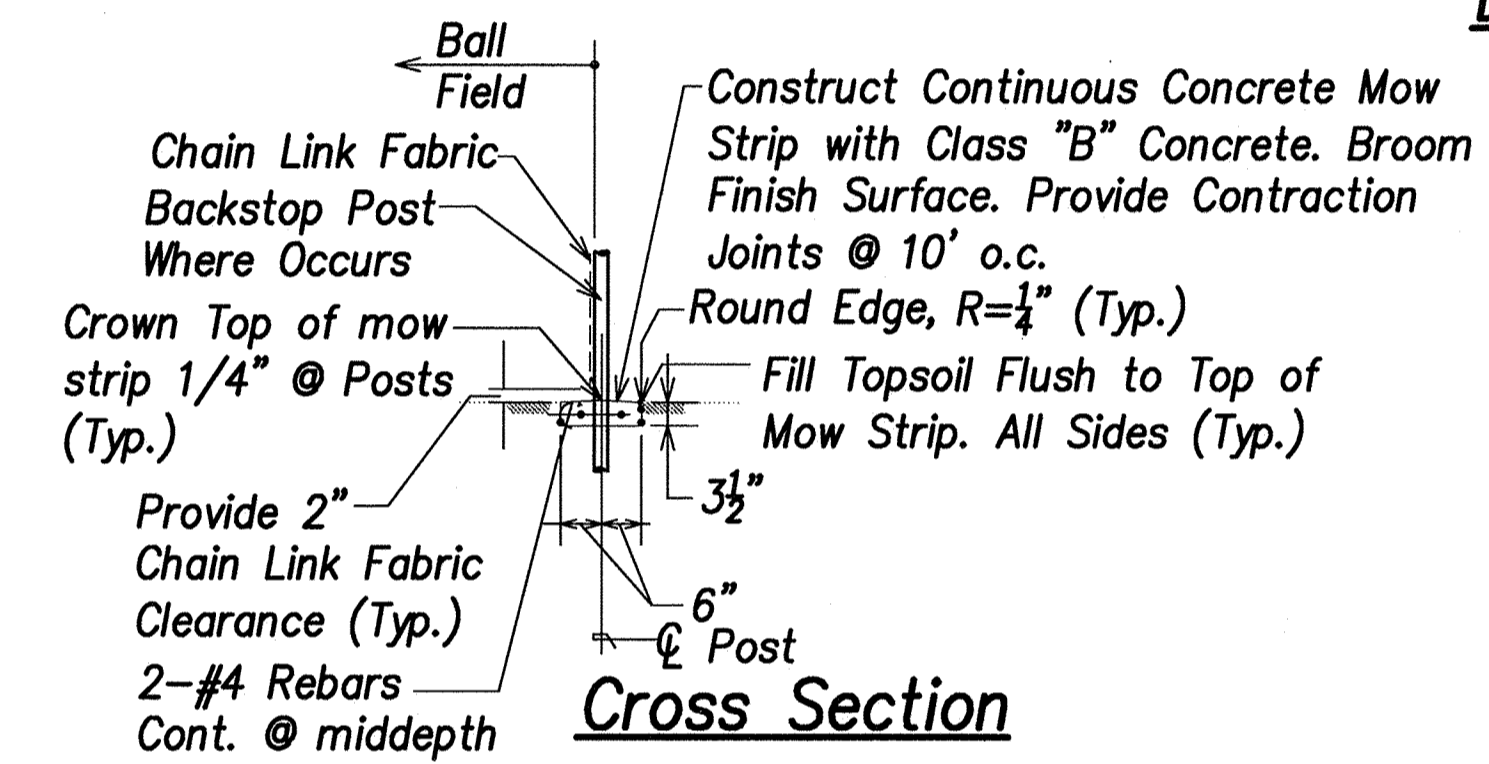
1. Provide minimum clearance between water crossing over sewer lines of 12 inch.
2. For pipes larger than 24 inch in diameter provide 12 inch of bedding below pipe.
3. For waterline installation, see DWS Std. Det. P10 for pipe bedding & initial backfill requirements.

**Trench Restoration Detail**  
Not to Scale



**Plan**

**Elevation Section**



**Cross Section**

**Note:**

Recess top of post footing as required to construct continuous 3 1/2 inch thick concrete mow strip

**Mow Strip**  
Not to Scale

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION <b>CENTRAL MAUI REGIONAL SPORTS COMPLEX</b> PHASE 3 WAILUKU, MAUI, HAWAII <b>MISC. DETAILS</b>					
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.					
DESIGNED:	GR/NN/JP	SUBMITTED:	--	DATE:	DEC 2 2015
DRAWN:	GR/NN/JP	CHECKED:	GTR	SCALE:	AS SHOWN
APPROVED:					DRAWING NO.
R. M. TOWILL CORPORATION 4/30/18 EXP. DATE CHIEF ENGINEER				DEC 2 2 2015 DATE	<b>C-55</b>

General:

- A. Workmanship and materials shall conform to the building code of the AASHTO LRFD Bridge Design Specification, 5th Edition, 2010 including its subsequent interim specifications, and the Hawaii Standard Specifications for Road and Bridge Construction 2005 Edition. However, where reference is made to performance conforming to other standards the more stringent shall apply.
- B. The contractor shall compare all the contract documents with each other and report in writing to the Engineer all inconsistencies and omissions.
- C. The contractor shall take field measurements and verify field conditions and shall compare such field measurements and conditions with the drawings before commencing work. Report in writing to the Engineer all inconsistencies and omissions.
- D. The contractor shall be responsible for coordinating the work of all trades.
- E. The contractor shall be responsible for means and methods of construction, workmanship and job safety.
- F. The contractor shall provide temporary shoring and bracing as required for stability of structural members and systems.
- G. Construction loading shall not exceed design live load unless special shoring is provided. Permitted construction loads shall be properly reduced in areas where the structure has not attained full design strength.
- H. The contractor shall be responsible for protection of the adjacent properties, structures, streets and utilities during the construction period. Any damaged or deteriorated property shall be restored to the condition prior to the beginning of work or better at no cost to the owner.
- I. Details noted as typical on the structural drawings shall apply in all conditions unless specifically shown or noted.

Design Criteria:

- A. Design Live Loads
  - 1. Drain manhole and catch basin top slab ----- HS-20
  - 2. Roof live load----- 20 psf
- B. Wind Loads
  - 1. Basic wind speed (3 second gust) ----- 105 mph
  - 2. Exposure category -----C
- C. Soil Properties
  - 1. Bearing pressure
    - a. Allowable bearing: ----- 2,500 psf
    - b. Strength limit state: ----- 3,350 psf
    - c. Extreme limit state: ----- 7,500 psf
  - 2. Coefficient of friction: ----- 0.40
- D. Lateral Earth Pressure
  - 1. Active pressure (level backfill): ----- 40 pcf
  - 2. At-rest pressure (level backfill): ----- 60 pcf
  - 3. Passive pressure: ----- 300 pcf

Foundation:

- A. Foundation design is based on geotechnical investigation by Geolabs, Inc and W.O. 6802-00, dated Oct 1, 2013.
- B. Contractor shall provide de-watering of excavated areas, as required.
- C. Contractor shall provide design and installation of all cribbing, sheeting, and shoring necessary to preserve excavations and earth banks. Shoring shall conform to OSHA regulations.
- D. Footings shall bear on undisturbed in-situ firm soils bottom of footings shall be compacted to provide a relatively firm and smooth bearing surface prior to placement of reinforcing steel and concrete. If soft and/or loose materials are encountered at the bottom of footing excavations, they shall be over-excavated to expose the underlying firm materials. The over-excavated area shall be backfilled with non-expansive structural fill material compacted to a minimum of 95% relative compaction.
- E. Excavations for footings shall be approved by the geotechnical engineer (provided by contractor) prior to placement of concrete and reinforcing.
- F. Fill should be moisture conditioned to within two percent of the optimum moisture content and placed in horizontal lifts not to exceed eight inches. Fill shall be compacted to minimum 90% relative density as measured by ASTM D1557, method a or d.

Concrete:

- A. Concrete construction shall conform to American Concrete Institute ACI 318R-05.
- B. Concrete shall be regular weight hard rock concrete and shall have the following minimum 28 day compressive strengths:
  - a. Ramps, Stairs ----- 3,000 psi
  - b. Drainage structures----- 4,000 psi
  - c. Retaining structures----- 4,000 psi
  - d. All other concrete----- 2,500 psi
- C. Concrete delivery tickets shall record all free water in the mix at batching plant, added for consistency by driver, and any additional request by contractor up to the maximum amount allowed by the mix design.

Concrete Cont:

- D. All inserts, anchor bolts, plates, and other items to be cast in the concrete shall be hot-dipped galvanized according to ASTM A153 unless otherwise noted.
- E. Reinforcing bars, anchor bolts, inserts, and other items to be cast in the concrete shall be secured in position prior to placement of concrete.
- F. Conduits, pipes, and sleeves passing through a slab or footing that do not conform to typical details shall be located and the proposed construction detail submitted to the Engineer for approval.
- G. Conduits, pipes, and sleeves embedded within a slab or wall (other than those merely passing through) shall be:
  - a. No larger in outside dimensions than one third the overall slab or wall thickness in which they are embedded.
  - b. Placed in the middle one third of slab or wall thickness
  - c. Spaced no closer than three diameters or widths on center.
- H. Conduits, pipes, and sleeves shall not be placed through or embedded in a beam unless specifically detailed.
- I. The contractor shall locate construction joints not shown on the drawings, so as not to impair the strength of the structure and to minimize shrinkage stresses. Submit proposed locations of construction joints to the engineer for approval.

Reinforcing Steel:

- A. Reinforcing steel shall be deformed bars conforming to ASTM A615, grade 60.
- B. Welded wire fabric shall conform to ASTM A185, galvanized.
- C. Clear concrete cover for reinforcing bars shall be as follows, unless otherwise noted:
  - a. Footings, grade beams, etc. cast against earth----- 3"
  - b. Footings, walls, grade beams, etc. formed and exposed to earth or weather--- 2"
- D. Clear distance between the surface of a bar and any surface of a masonry unit shall be not less than 3/4 inch, unless otherwise noted.
- E. Reinforcing steel shall be spliced where indicated on plans. Provide lap splice length per typical details and schedule, unless otherwise noted.
- F. Bar bends and hooks shall be "standard hooks" in accordance with ACI 318-05.
- G. Minimum reinforcement bend diameters shall comply with ACI 318-05, section 7.2
- H. Reinforcing steel shall be placed and secured in conformance with CRSI manual of standard practice with placement tolerances per ACI standard 117.

Structural Steel:

- A. Fabrication and erection of structural steel shall conform to the American Institute of Steel Construction Manual of Steel Construction, thirteenth edition.
- B. Structural steel shall conform to ASTM A36 unless otherwise noted.
- C. Steel pipes shall conform to ASTM A53, grade B.
- D. Plates and bars shall conform to ASTM A36.
- E. Welds and welding procedures shall conform to the structural welding code AWS D1.1 of the American Welding Society.
- F. Welding shall be performed by welders prequalified for welding procedures to be used.
- G. Welding electrodes shall be E70XX.
- H. All anchor bolts, plates, and other items to be cast in concrete shall be hot-dip galvanized according to ASTM A153 unless otherwise noted.
- I. All steel shall be hot-dip galvanized after fabrication according to ASTM A123.
- J. Any damaged galvanized surface shall be repaired as follows:
  - 1) Prepare surface per SSPC-SP1, solvent cleaning.
  - 2) Apply two coats of cold applied galvanizing compound containing 95% metallic zinc content by weight in dry film and 52% solids content by volume.
  - 3) Application rate shall be 1.5 mils dry film thickness per coat.

Fencing Notes:

- A. Chain link fence fabric, pipes, fittings, fasteners, truss rod, posts, hog rings, and tension wire shall be hot-dipped galvanized.
- B. Chain link fabric shall be continuous and fastened to end, intermediate and corner posts by tension bands evenly spaced at 15", Max.
- C. Wire fasteners shall be No. 12 gauge galvanized tie wire. Chain link fabric shall be 9 gauge, 2" mesh.
- D. Chain link fabric shall be fastened to line posts with wire fastenings evenly spaced at 12", Max.
- E. Chain link fabric shall be fastened to horizontal rails with wire fastenings evenly spaced at 12", Max.
- F. All wire fastenings end shall be wrapped around chain link a minimum of on complete turn. (Hooking of wire ends shall not be permitted.)
- G. No splicing shall be allowed on straight run pipes.
- H. Top and bottom selvages of chain link fabric shall be knuckled.
- I. All field welds and damaged surfaces shall be painted with two coats of ZRC cold galvanizing compound.
- J. All fence posts shall be installed evenly spaced, unless noted otherwise on the plans.
- K. Afer installation, all bolt ends shall be cut flush with the nuts and ground smooth, painted with two coats cold galvanizing compound.
- L. 2" clearance between chain link fence fabric and concrete slab.

Dugout Notes:

- A. All Galvanized iron pipe posts, frames, rails and bench steel frame support connections shall be of welded construction. Ends of pipe braces shall be properly coped prior to welding. All welded connections shall be painted with ZRC cold galvanizing compound or equal, acceptable to the Engineer.
- B. Slope of concrete pad shall be as shown on the drawings, except where the exist ground conditions are contrary to the slope. Any changes shall be accepted by the Engineer.
- C. Chain link fence fabric, pipes, fittings, fasteners, truss rod, posts, hog rings and tension wire shall be hot-dip galvanized.
- D. Chain link fabric shall be continuous and fastened to end and corner posts by stretcher bars with tension bands evenly spaced at 15", max.
- E. Wire fastenings shall be No. 12 gauge galvanized tie wire. Chain link fabric shall be 9 gauge, 2" mesh.
- F. Chain link fabric shall be fastened to line posts with wire fastenings evenly spaced at 12", max.
- G. Chain link fabric shall be fastened to horizontal rails with wire fastenings evenly spaced at 12", max.
- H. All wire fastening ends shall be wrapped around chain link a minimum of one complete turn.
- I. No splicing shall be allowed on straight-run pipes.
- J. Top and bottom selvages of chain link fabric shall be knuckled.
- K. All field welds and damaged galvanized surfaces shall be painted with two coats of ZRC cold galvanizing compound and two finish coats of ZRC galvute.
- L. All fence posts shall be installed evenly spaced, unless otherwise noted on the plan.
- M. After installation, all bolt ends shall be cut flush with the nuts and ground smooth, painted with 2 coats cold galvanizing compound.
- N. provide 2" clearance between bottom of chain link fence fabric and finish concrete slab.
- O. Corrugated metal roof shall be hot-dipped 55% zinc-aluminum alloy coated steel, 24 gauge, deep corrugation, manufactured in accordance with ASTM A-792, grade 33, structural quality. Corrugated metal roof shall have a minimum section modulus (sx) of 0.105 in. Zincolume coating designation shall be AZ50.
- P. Dugout wood bench shall be painted with one coat of devoe paint acrylic latex all-weather primer (11XX) and finished with two coats devoe porch and floor latex (78XX). Finish color shall be "Park Green".
- Q. Pipe for posts, rails and roof frame shall be standard weight conforming to ASTM 501 or ASTM A53, type B and hot-dipped galvanized. Pipe shall be manufactured in the United States of America. Pipe dimensions on this plan are nominal diameter.
 


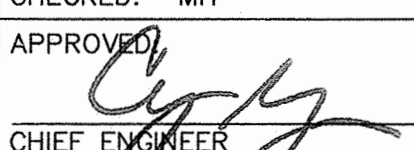
Size of Pipe	Wieght per foot (lbs)
1 1/2" N.D.	2.72
3" N.D.	7.58
- R. All pipe splicing shall be done in accordance with 4/S-8
- S. All wood shall be douglas fir (select no. 2 or better) and wolmanized.

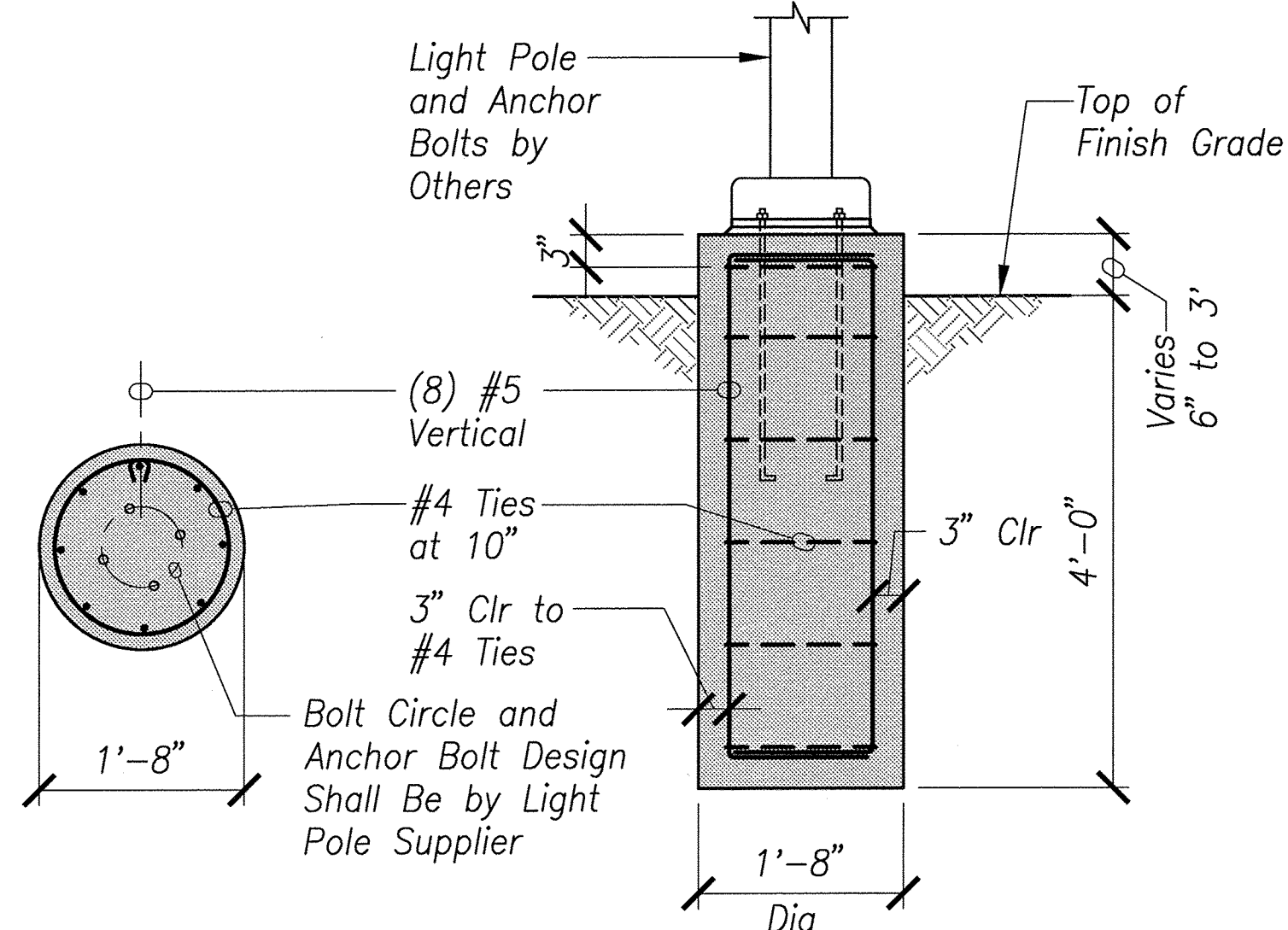
Backstop Notes:

- A. All pipe and post sizes are nominal diameter (N.D.).
- B. Pipes, posts, stretcher bars, bands, fabrics, etc. shall be hot-dip galvanized.
- C. Pipe connections shall be welded and painted with ZRC cold galvanizing compound.
- D. Fabric shall be fastened to end and corner posts by stretcher tension bars and tension bands spaced approximately 15" apart.
- E. Wire fastening shall be No.12 gauge galvanized tie wire.
- F. Line post wire fastenings shall be spaced 14" apart.
- G. Horizontal brace wire fastenings shall be spaced 18" apart.
- H. Home plate and pitcher's plate not in contract.
- I. No splicing shall be allowed on all straight-run pipes except for line, corner, brace or end posts (one splice only) see detail 4/S-8.

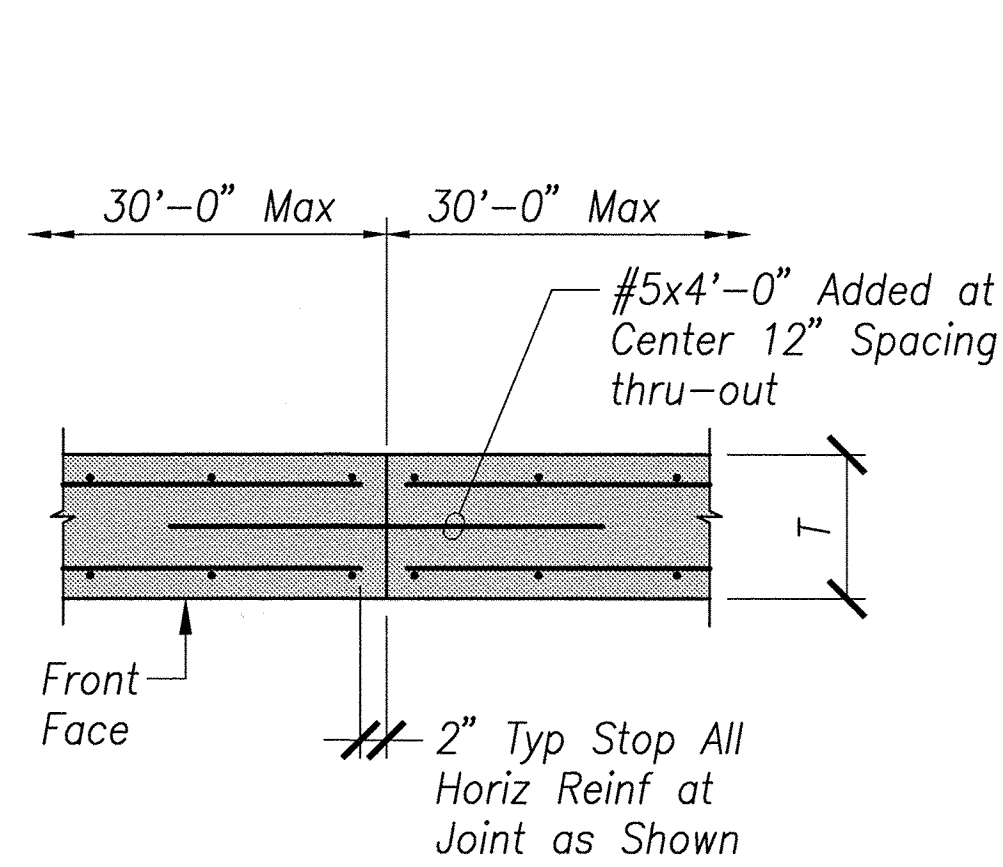
Special Inspections:

- A. The contractor shall be responsible for providing special inspection of portions of the work as required by the building code at the appropriate time at no additional cost to the State. Frequency of inspection is defined in the IBC, Section 1704 Tables, as amended by the County. The contractor shall correct defective work at no additional cost to the State and pay for re-inspection as required.

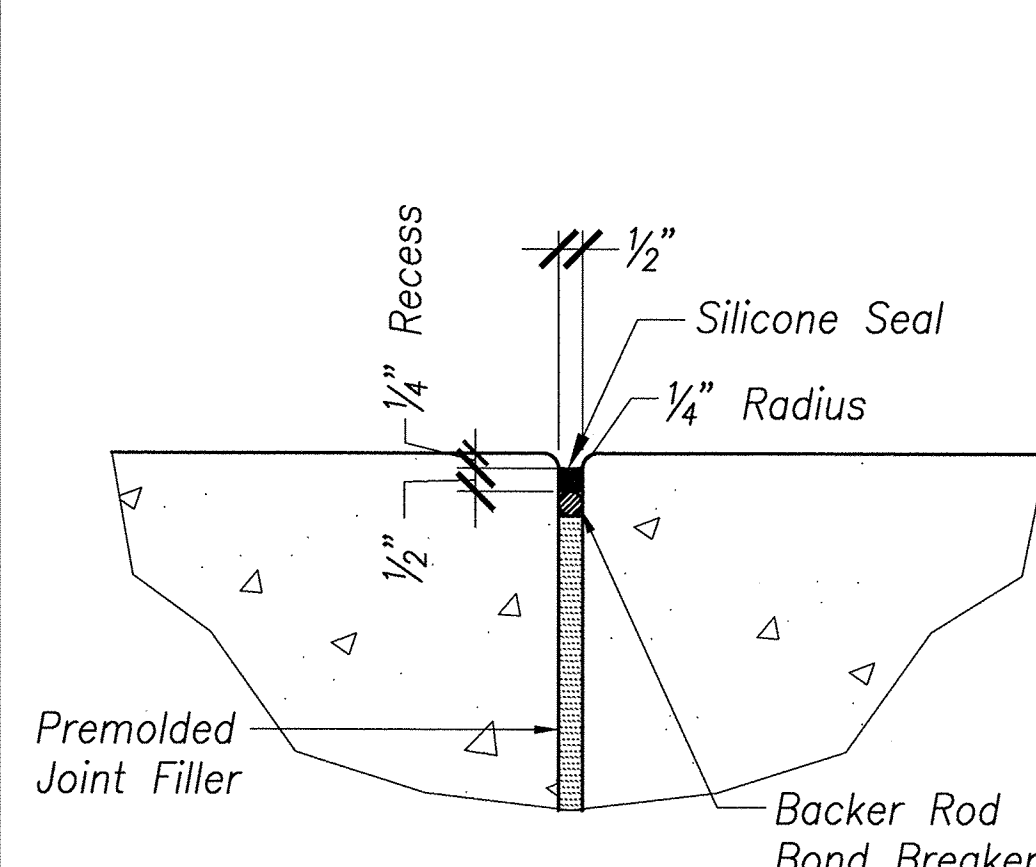
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STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION <b>CENTRAL MAUI REGIONAL SPORTS COMPLEX</b> <b>PHASE 3</b> WAILUKU, MAUI, HAWAII <b>GENERAL NOTES, TYPICAL DETAILS</b>					
					
DESIGNED: DK		SUBMITTED: -- <input checked="" type="checkbox"/>			
DRAWN: CADD		DATE: DECEMBER 2015			
CHECKED: MH		SCALE: AS SHOWN			
APPROVED:  CHIEF ENGINEER					DRAWING NO. <b>S-1</b>
EXPIRATION DATE OF LICENSE 4/30/2016 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION					DATE <b>DEC 2 2 2015</b>



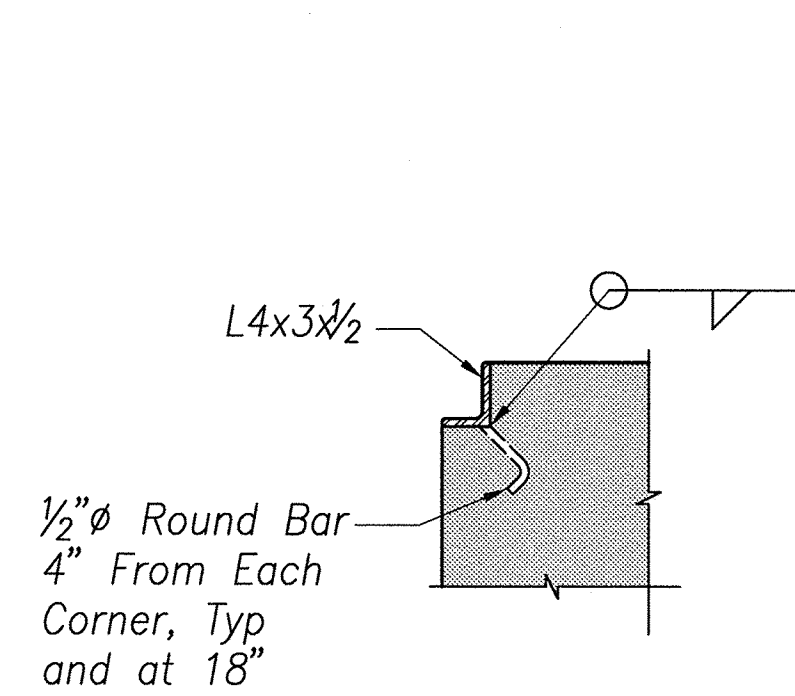
**LIGHT POLE CONCRETE BASE DETAIL** 1  
Not To Scale S-2 | S-2



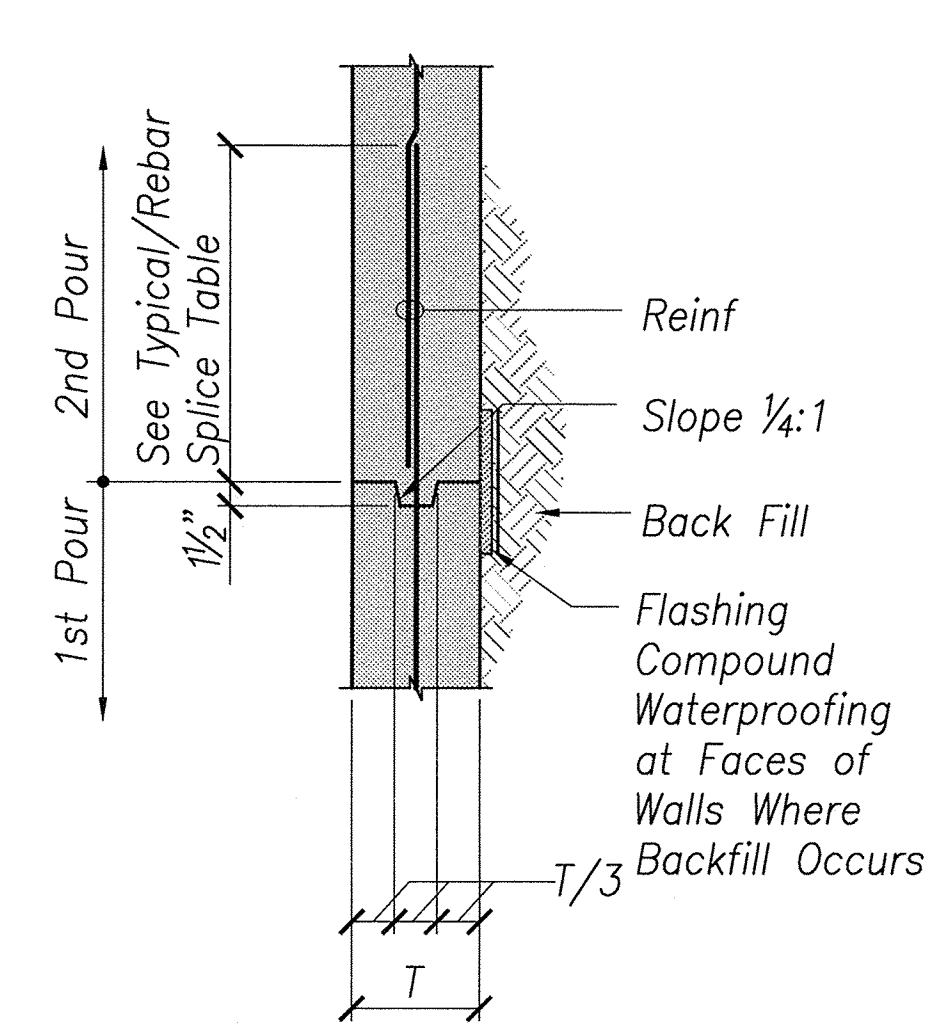
**JOINT DETAIL** 2  
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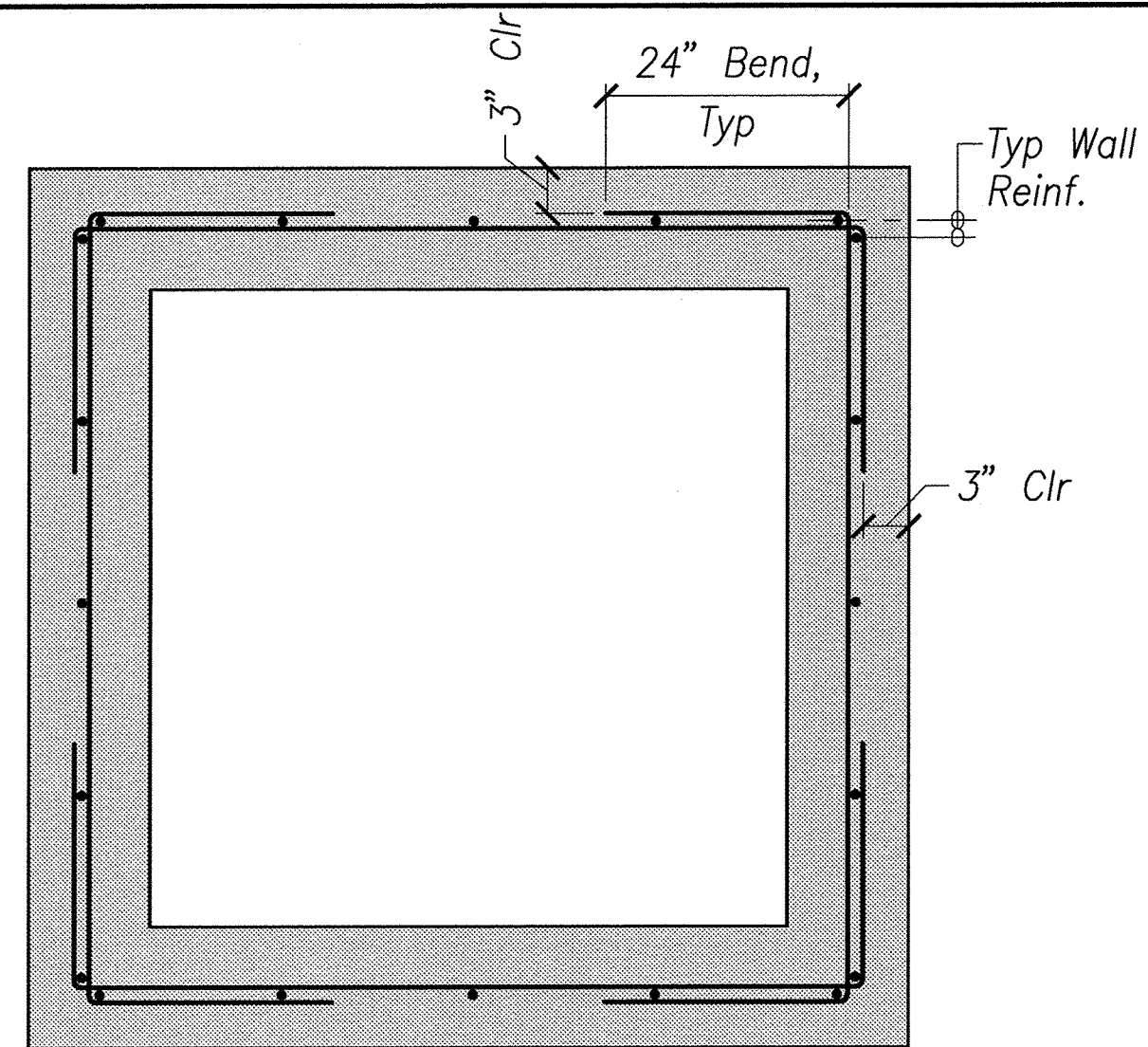
**EXPANSION JOINT DETAIL** 3  
Not To Scale S-2 | S-2



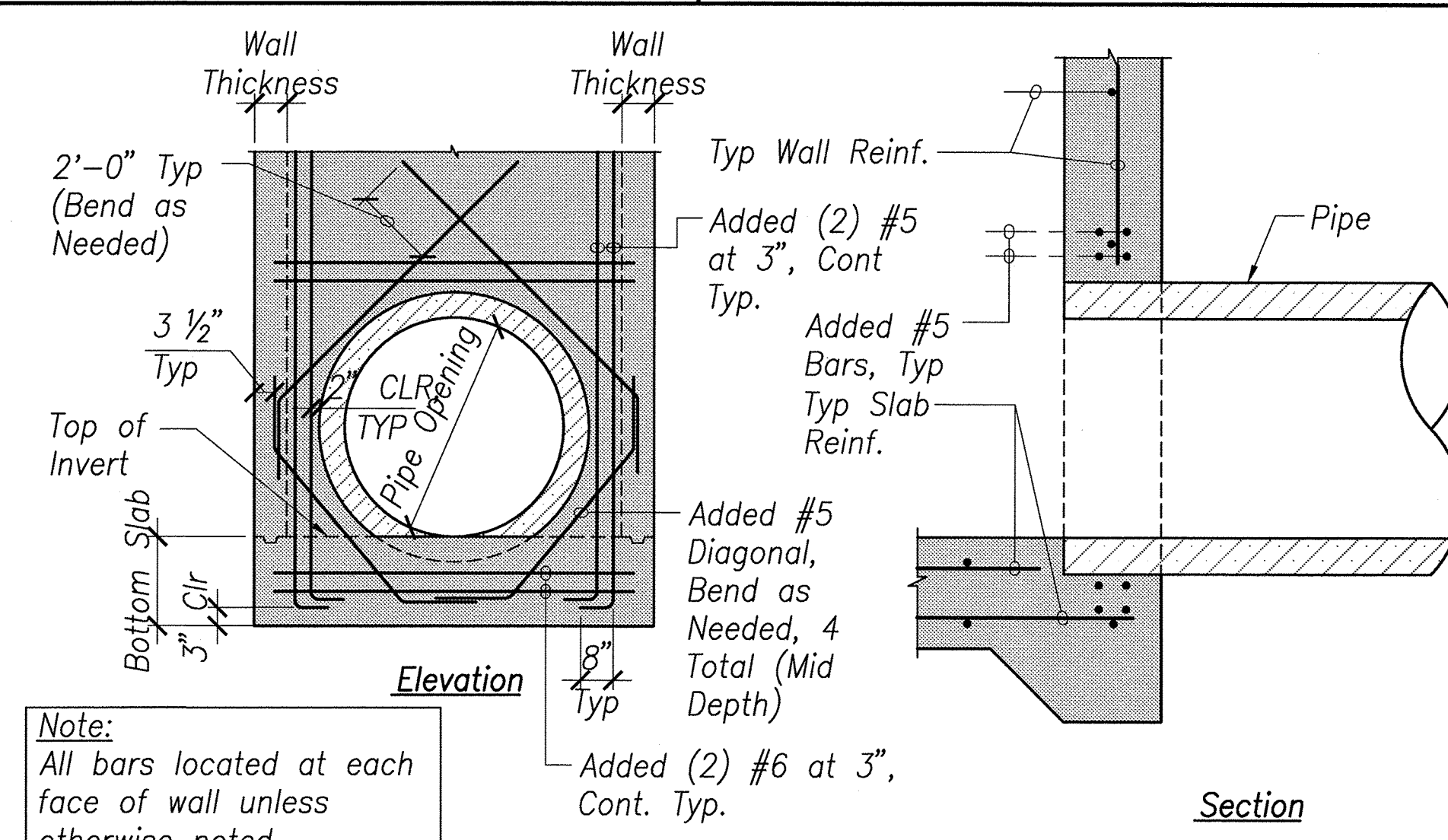
**GRATING SUPPORT DETAIL** 4  
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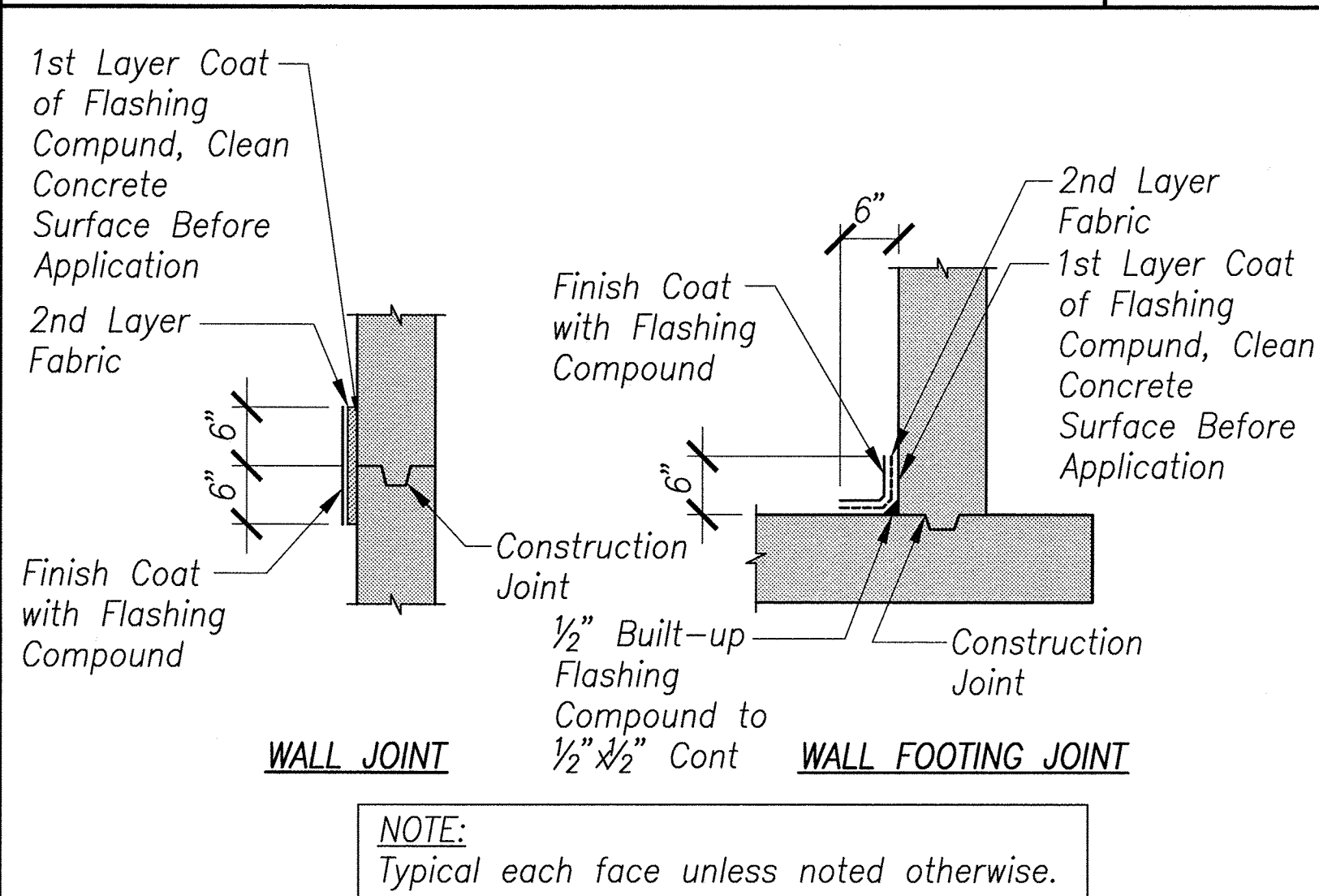
**TYP CONSTRUCTION JOINT** 5  
Not To Scale S-2 | S-2



**TYP PLAN VIEW OF WALL REINF** 6  
Not To Scale S-2 | S-2

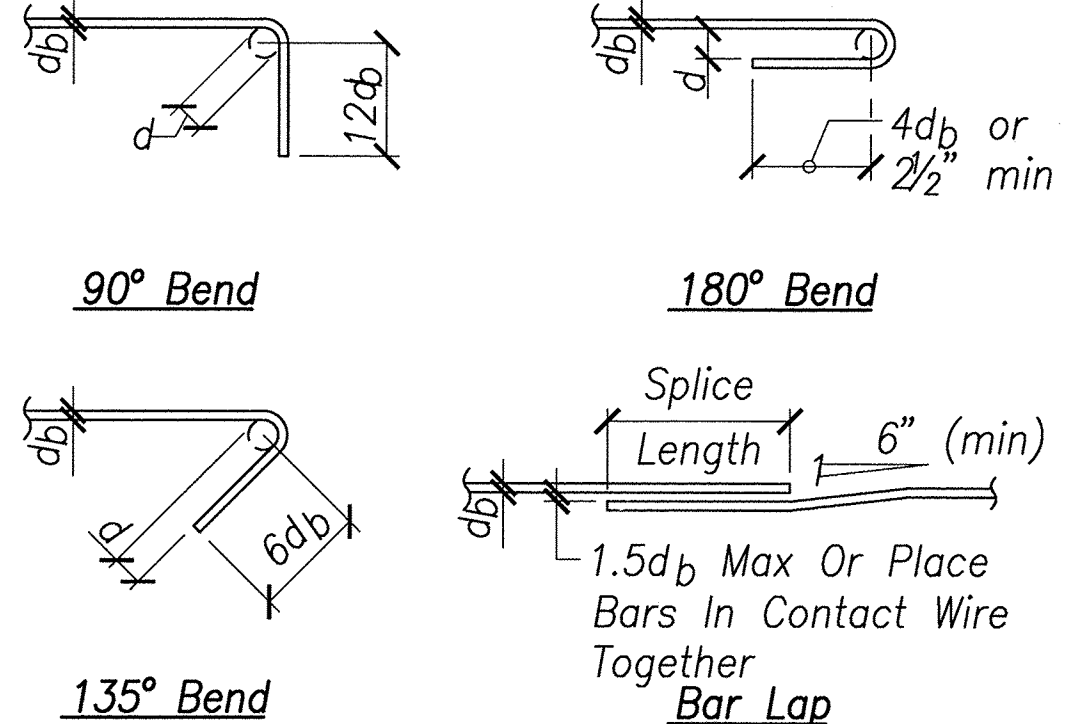


**ADDED REINFORCING AT PIPE OPENINGS** 7  
Not To Scale S-3 | S-2



**TYPICAL WATERPROOFING DETAIL** 8  
Not To Scale S-3 | S-2

Minimum Splice and Development Lengths										
Bar Size	Concrete Strength = 3,000 psi					Concrete Strength = 4,000 psi				
	Lap Splice		Development			Lap Splice		Development		
	Top Bars	Other Bars	Top bars	Other Bars	With Standard Hook	Top Bars	Other Bars	Top bars	Other Bars	With Standard Hook
#3	28"	22"	22"	18"	10"	26"	20"	20"	16"	8"
#4	38"	30"	30"	22"	12"	34"	26"	26"	20"	10"
#5	48"	36"	36"	28"	14"	42"	32"	32"	24"	12"
#6	56"	44"	44"	34"	18"	50"	38"	38"	30"	16"
#7	82"	64"	64"	48"	20"	72"	54"	54"	42"	18"
#8	94"	72"	72"	56"	22"	82"	62"	62"	48"	20"
#9	106"	82"	82"	62"	26"	92"	70"	70"	54"	22"
#10	118"	92"	92"	70"	28"	102"	80"	80"	62"	26"
#11	132"	102"	102"	78"	32"	114"	88"	88"	68"	28"



$D = 6d_b$  for #8 and smaller  
 $D = 8d_b$  for #9 to #11

**Notes:**  
1. Lengths are for concrete with rebar spaced at 6 bar diameters minimum. Increase lengths by 25% for bars spaced less than 6 bar diameters.  
2. "Top Bars" are horizontal bars with 12" or more of concrete cast below.

**TYP REBAR SPLICE AND DEVELOPMENT LENGTH SCHEDULE** 9  
Not To Scale S-2 | S-2

REVISION NO.	SYMBOL	DESCRIPTION	SHT./OF	DATE	APPROVED

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
ENGINEERING DIVISION

**CENTRAL MAUI REGIONAL SPORTS COMPLEX  
PHASE 3  
WAILUKU, MAUI, HAWAII**

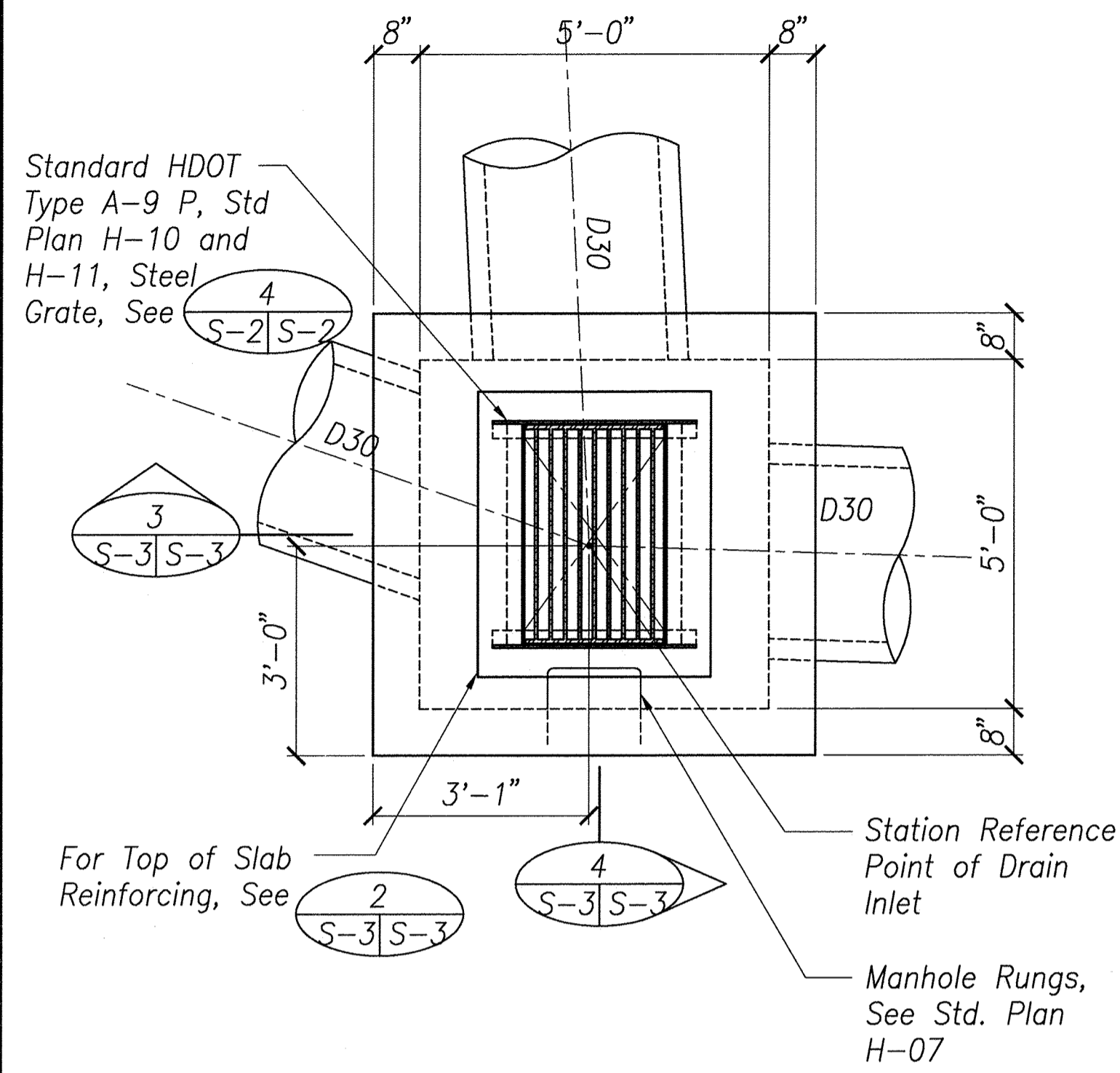
**SECTIONS AND DETAILS**

KEN HAZUO HAYASHIDA  
LICENSED PROFESSIONAL ENGINEER  
No. 6818-S  
HAWAII, U.S.A.

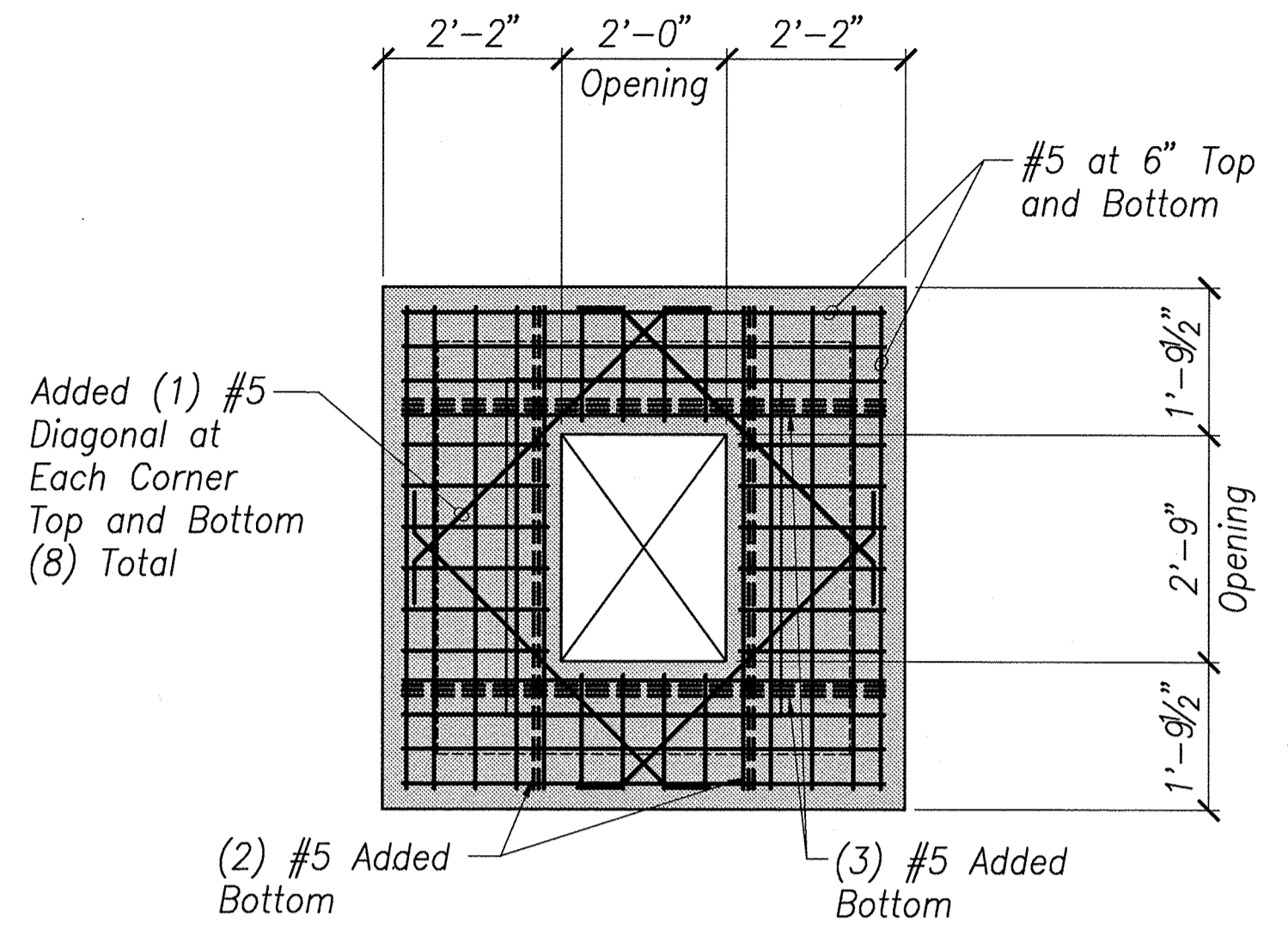
DESIGNED: DK  
DRAWN: CADD  
CHECKED: MH  
APPROVED: *[Signature]*  
CHIEF ENGINEER

SUBMITTED: --  
DATE: DECEMBER 2015  
SCALE: AS SHOWN  
DEC 2 2 2015  
DATE

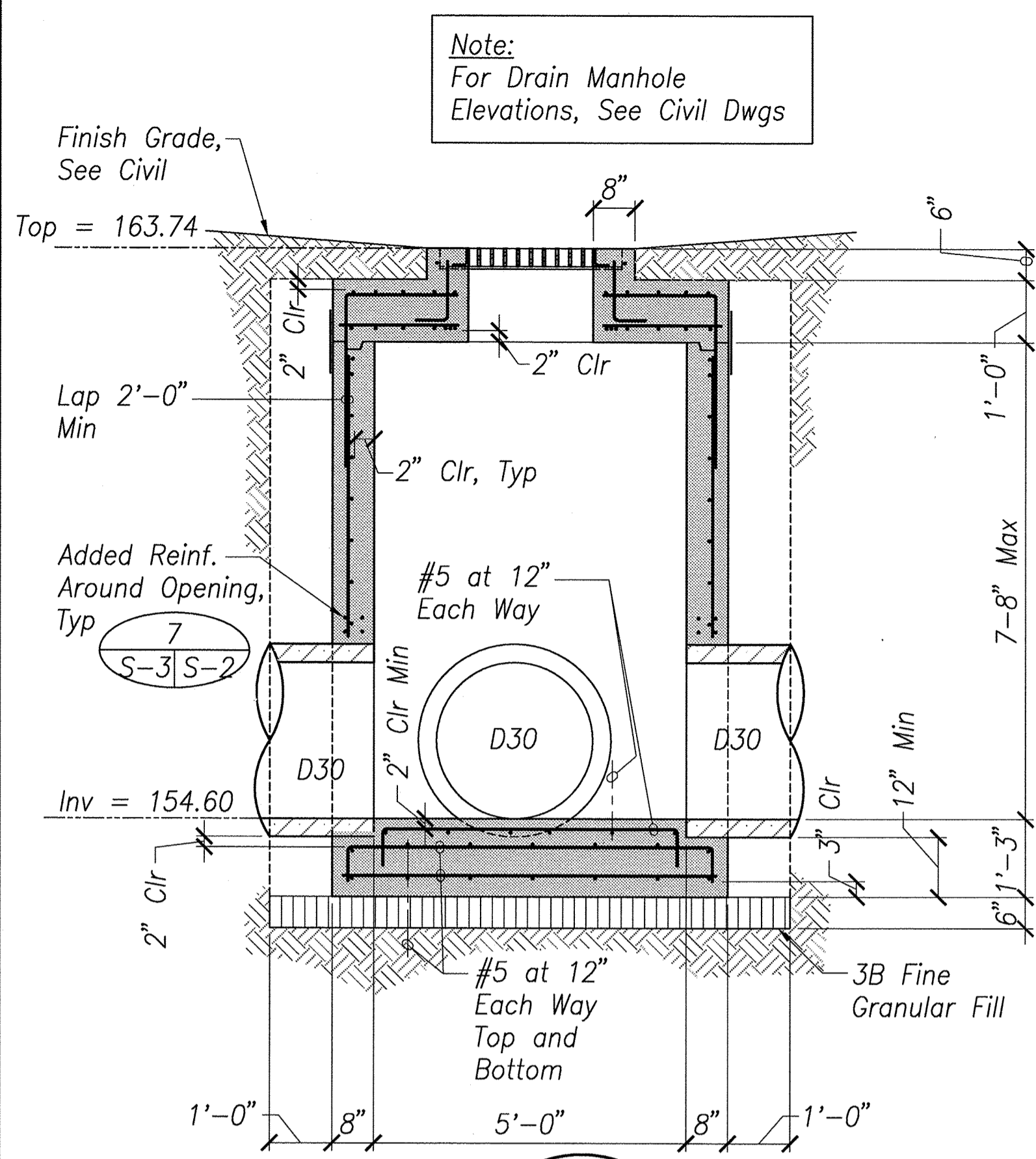
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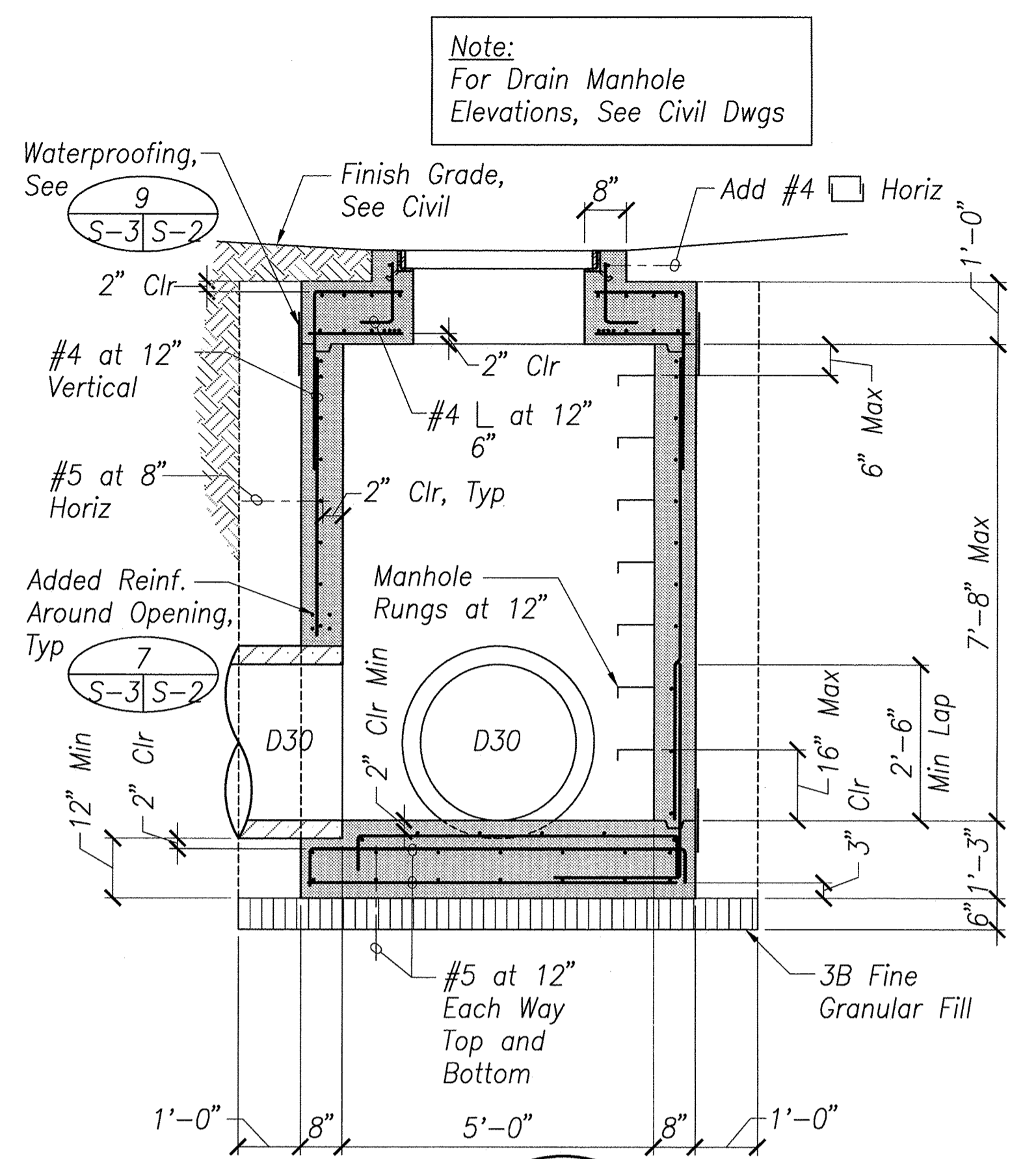
**PLAN-D1 INLET AT STA. 15+84**  
Scale: 1/2" = 1'-0"  
1  
S-3 | S-3



**PLAN-TOP SLAB REINFORCING STEEL**  
Scale: 1/2" = 1'-0"  
2  
S-3 | S-3



**SECTION**  
Scale: 1/2" = 1'-0"  
3  
S-3 | S-3

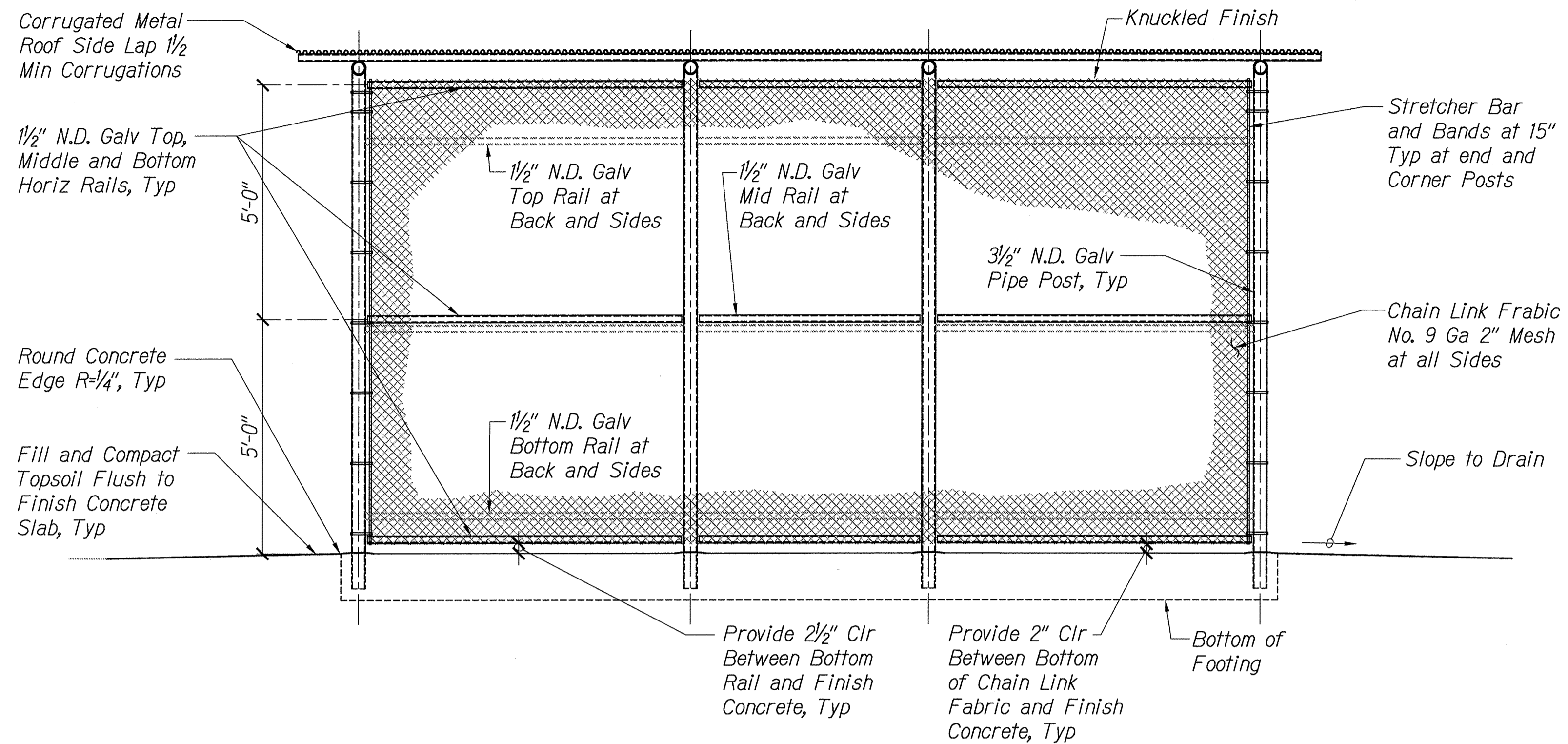


**SECTION**  
Scale: 1/2" = 1'-0"  
4  
S-3 | S-3

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION <b>CENTRAL MAUI REGIONAL SPORTS COMPLEX</b> <b>PHASE 3</b> WAILUKU, MAUI, HAWAII <b>DRAIN INLET D1</b> <b>PLANS AND SECTIONS</b>					
DESIGNED: DK DRAWN: CADD CHECKED: MH APPROVED: <i>[Signature]</i> <small>EXPIRATION DATE OF LICENSE 4/30/2016 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION</small>			SUBMITTED: -- <i>[Signature]</i> DATE: DECEMBER 2015 SCALE: AS SHOWN DATE: DEC 2 2 2015 DRAWING NO. <b>S-3</b>		

15-12-21\_3145 CMPRP-CIVIL PHASE 3(3145)\_S03.dwg, 12/21/2015 2:47:49 PM, tamamah

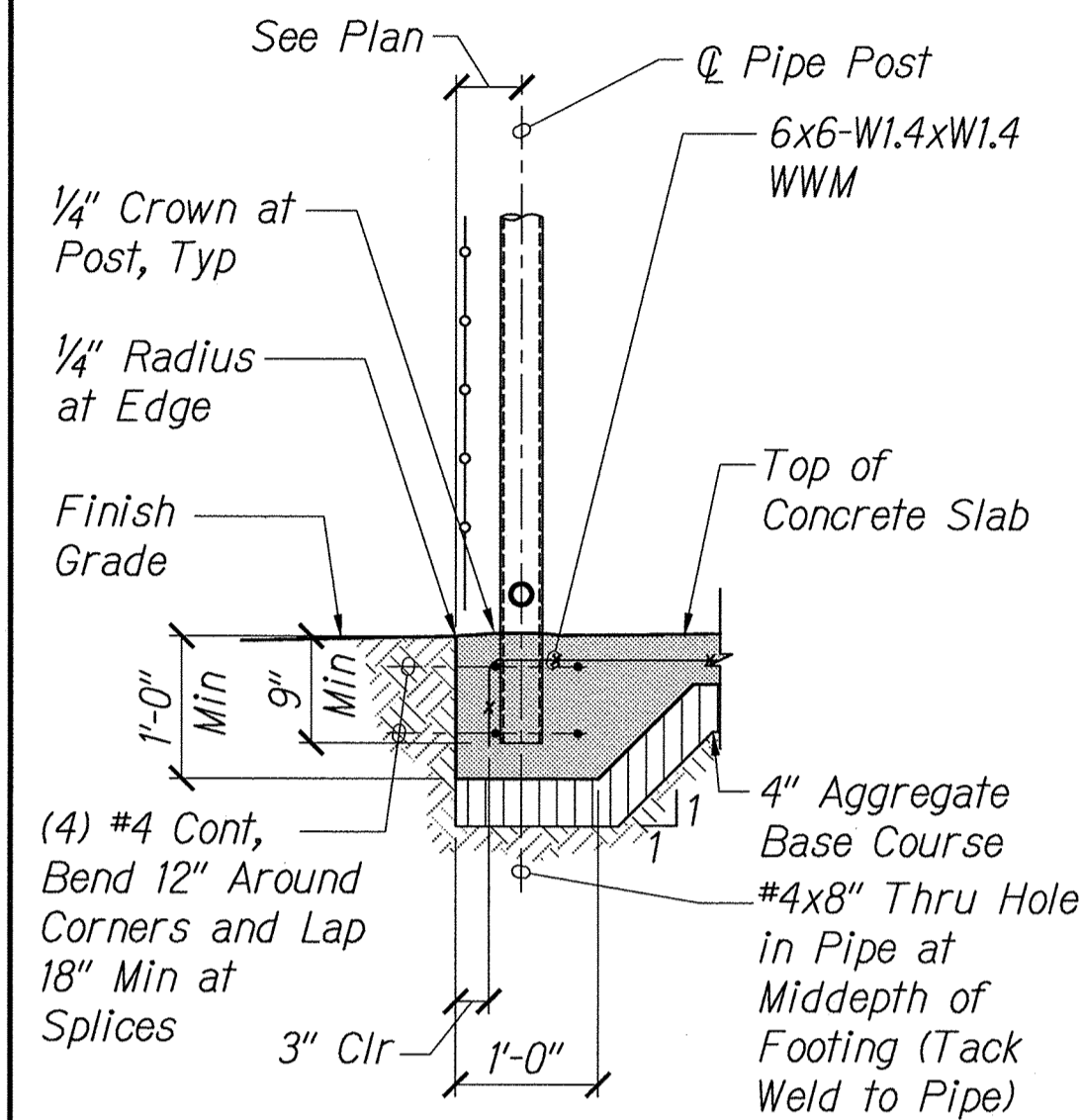




**FRONT ELEVATION**

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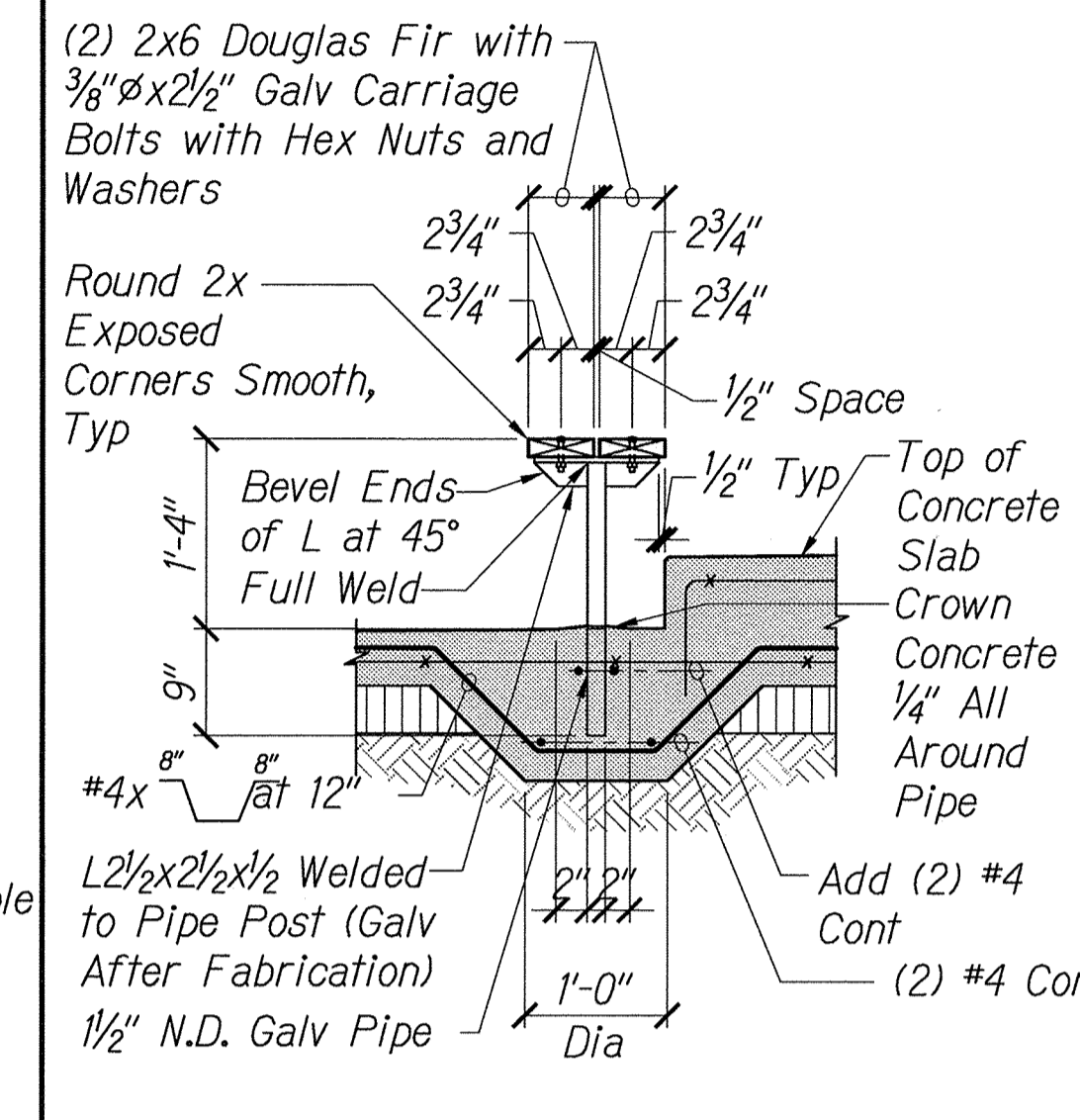
1  
S-5 | S-5



**SECTION 2**

Scale: 3/4" = 1'-0"

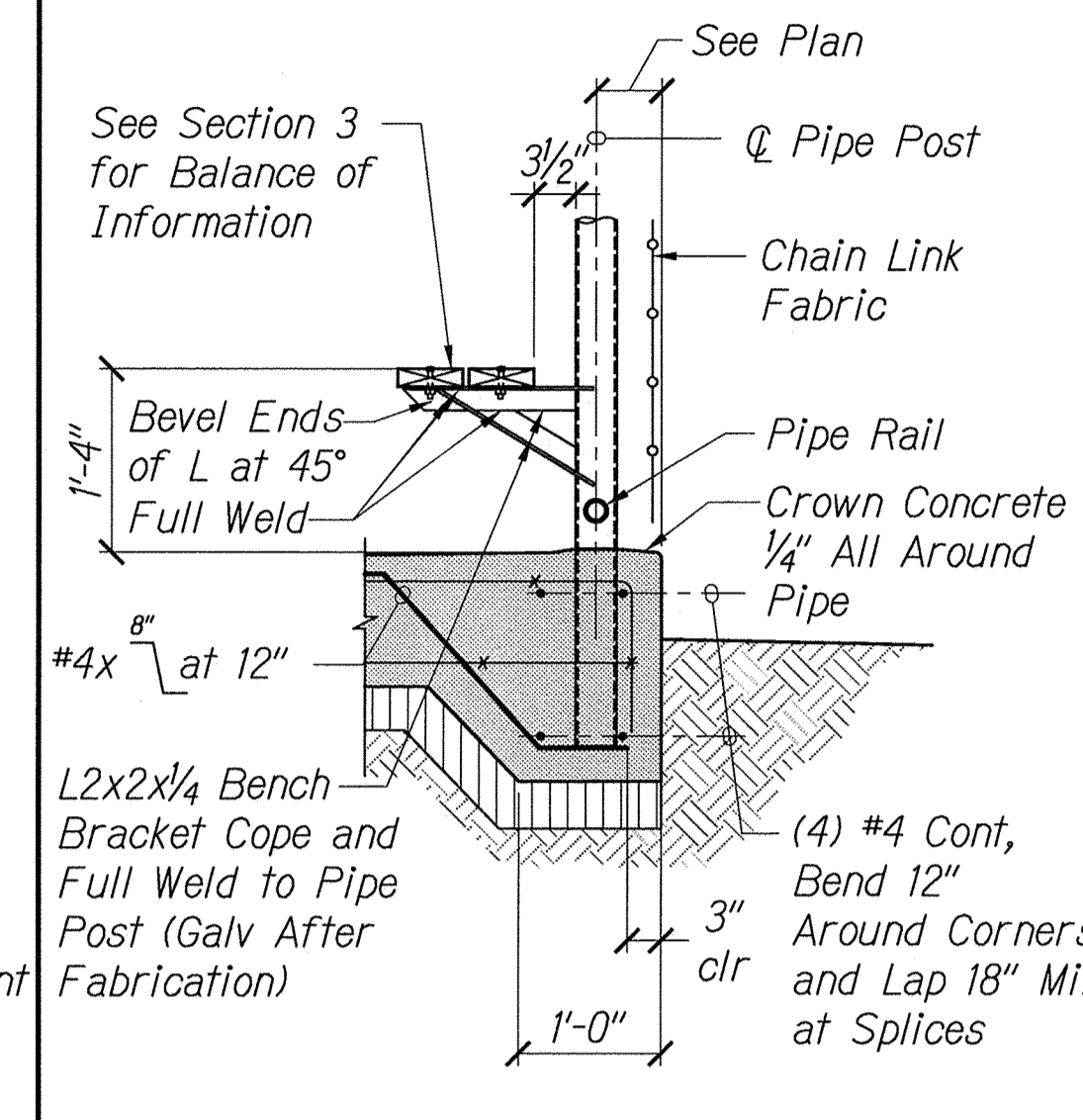
2  
S-4 | S-5



**SECTION 3**

Scale: 3/4" = 1'-0"

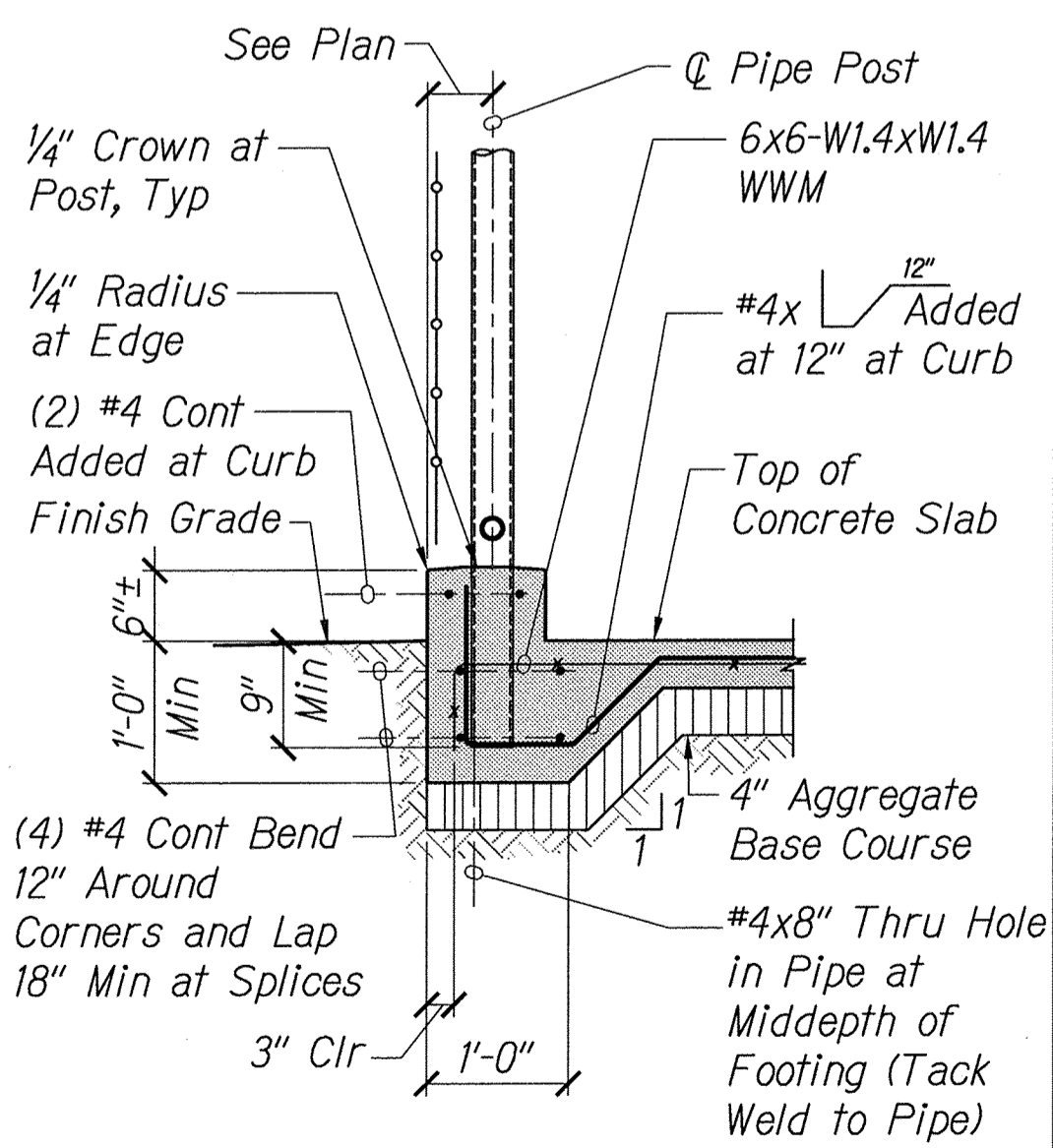
3  
S-4 | S-5



**SECTION 4**

Scale: 3/4" = 1'-0"

4  
S-4 | S-5



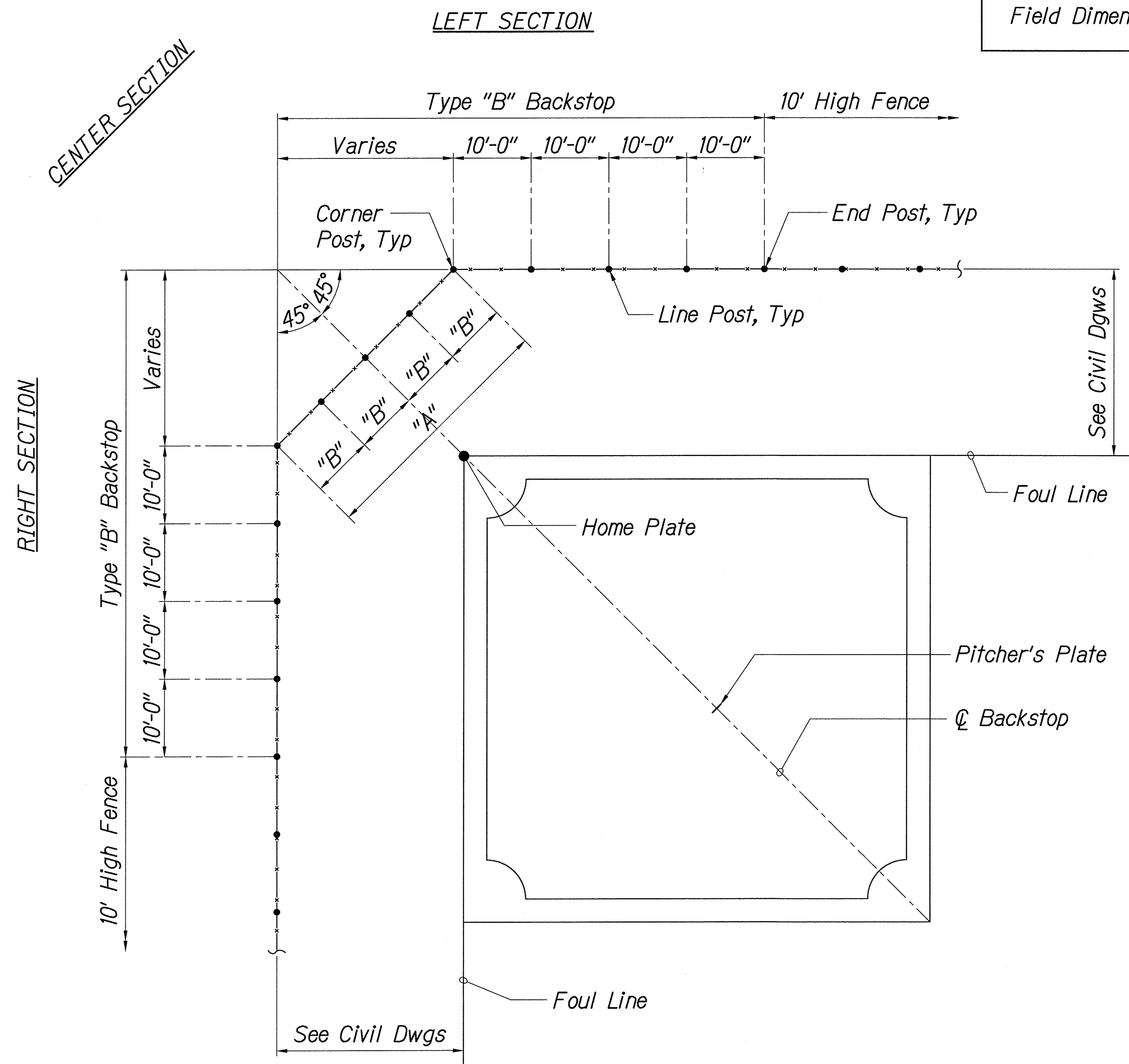
**SECTION 5**

Scale: 3/4" = 1'-0"

5  
S-4 | S-5

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION <b>CENTRAL MAUI REGIONAL SPORTS COMPLEX</b> <b>PHASE 3</b> WAILUKU, MAUI, HAWAII <b>SOFTBALL/BASEBALL DUGOUT</b> <b>ELEVATION AND SECTIONS</b>					
DESIGNED: DK		SUBMITTED: --		APPROVED:	
DRAWN: CADD		DATE: DECEMBER 2015		DRAWING NO. <b>S-5</b>	
CHECKED: MH		SCALE: AS SHOWN		DATE: <b>DEC 22 2015</b>	
APPROVED: EXPIRATION DATE OF LICENSE 4/30/2016 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION CHIEF ENGINEER					

*Note:*  
See Civil Dwgs for  
Backstop Location  
Dimensions and  
Field Dimensions



*Center Section Backstop (Option #3 Shown)*

Center Section Backstop Post Layout Schedule			
Backstop Options	"A"	"B"	Number of Posts
YBBF 3 and 4	20.71'	10'-0"	3
YBBF 2	24.85'	8.283'	4
YBBF 1	33.14'	8.285'	5

**TYPE B DIAMOND LAYOUT**

Scale: 3/32" = 1'-0"

1  
S-6 | S-6

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
ENGINEERING DIVISION

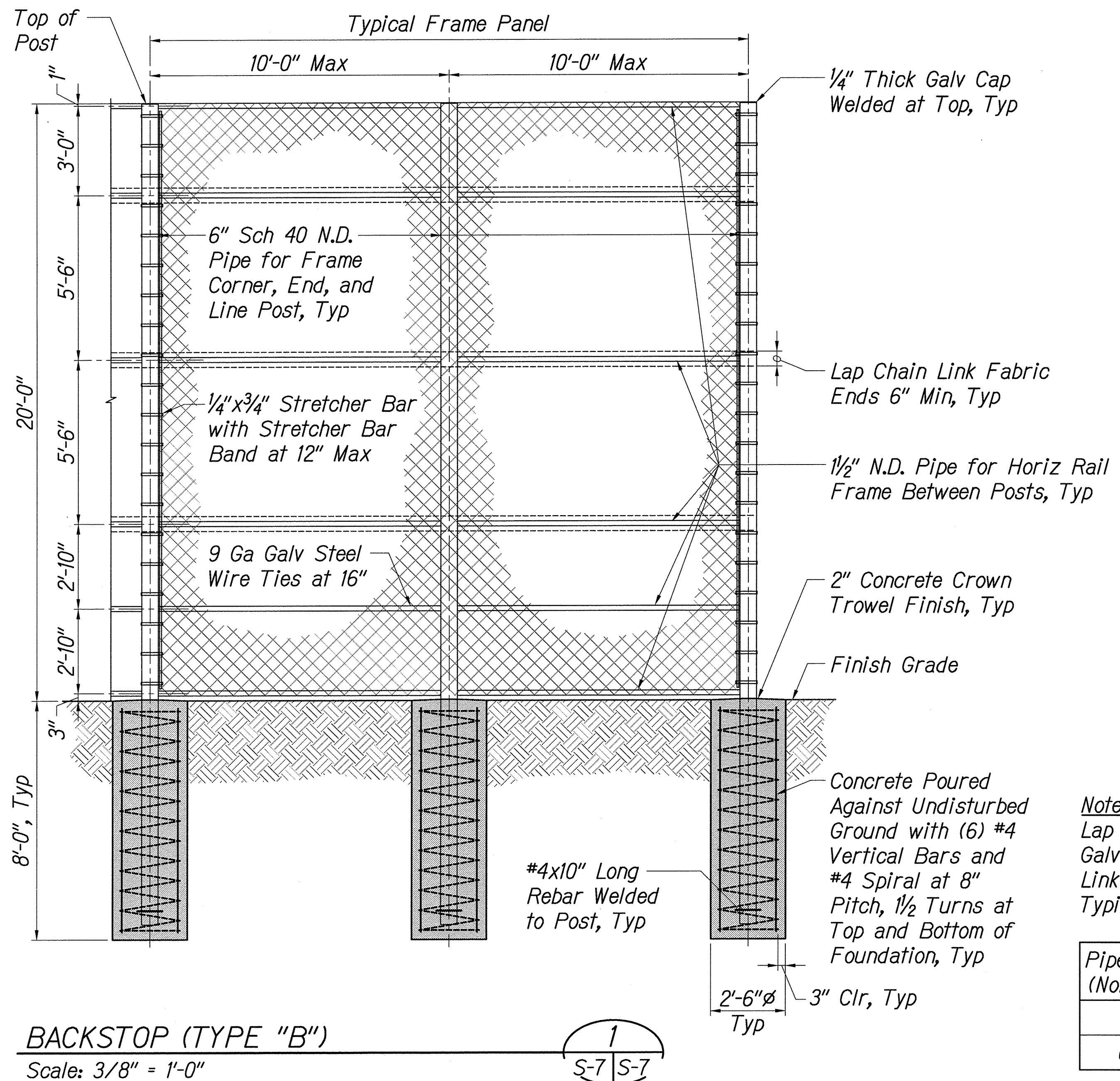
**CENTRAL MAUI REGIONAL SPORTS COMPLEX  
PHASE 3  
WAILUKU, MAUI, HAWAII**

**BACKSTOP PLAN**

DESIGNED: DK  
DRAWN: CADD  
CHECKED: MH  
APPROVED: *[Signature]*  
CHIEF ENGINEER

SUBMITTED: -- *[Signature]*  
DATE: DECEMBER 2015  
SCALE: AS SHOWN  
DATE: DEC 22 2015  
DRAWING NO. **S-6**

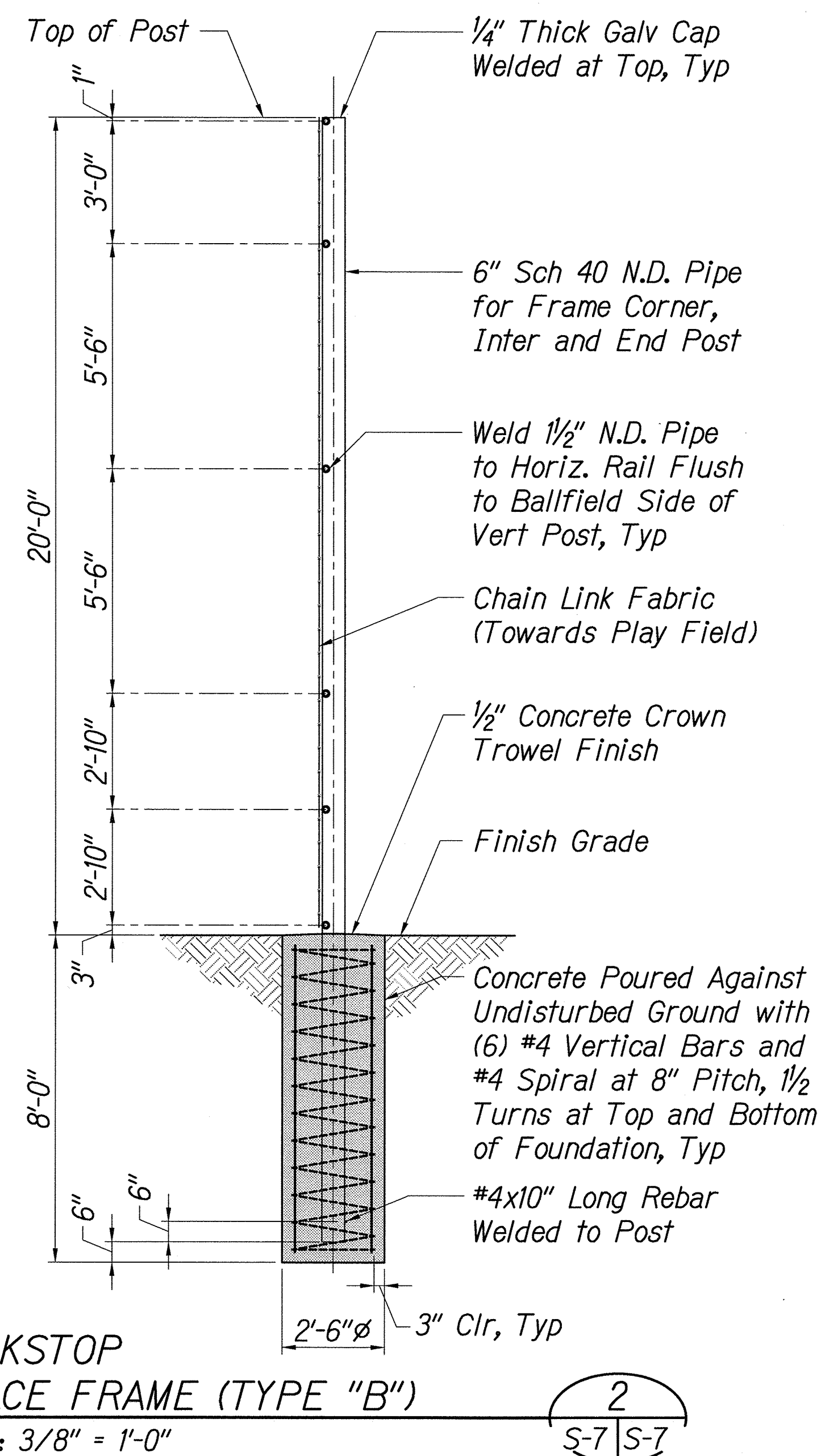




**Note:**  
Lap and Tie Galvanized Chain Link Fabric (6' High Typical) to Backstop.

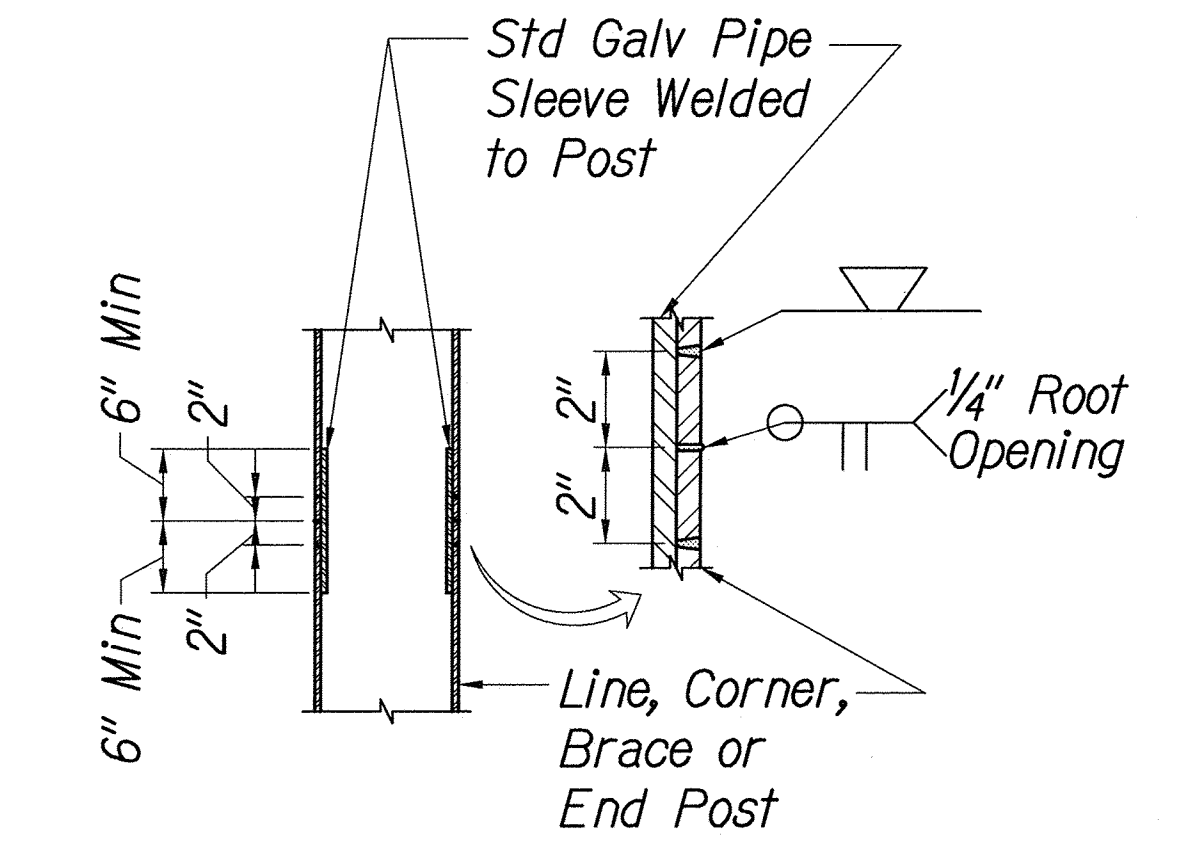
Pipe Size (Nominal)	Weight/Foot (lbs)
1 1/2"	2.72
6 5/8"	18.99

**BACKSTOP (TYPE "B")**  
Scale: 3/8" = 1'-0"  
1  
S-7 | S-7



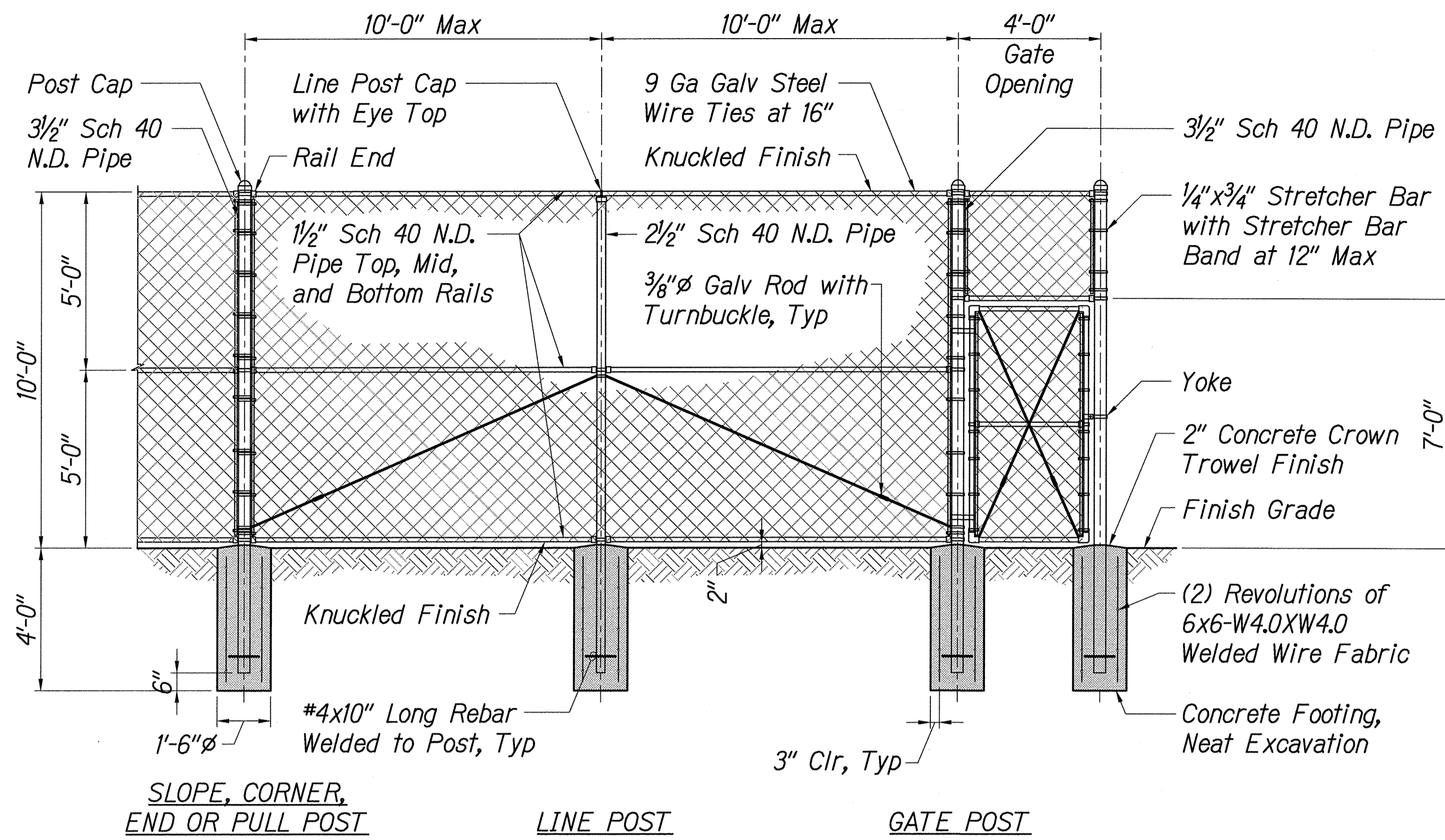
**BACKSTOP BRACE FRAME (TYPE "B")**  
Scale: 3/8" = 1'-0"  
2  
S-7 | S-7

- Notes:**
1. Posts and rails shall be Schedule 40 (standard weight) pipes.
  2. Sizes specified are nominal.
  3. All fencing materials and components shall be galvanized steel.
  4. Top rail couplings shall be located within 6" of line posts.
  5. Top of concrete footing shall be crowned to shed water.
  6. See Civil drawings for location of fence.



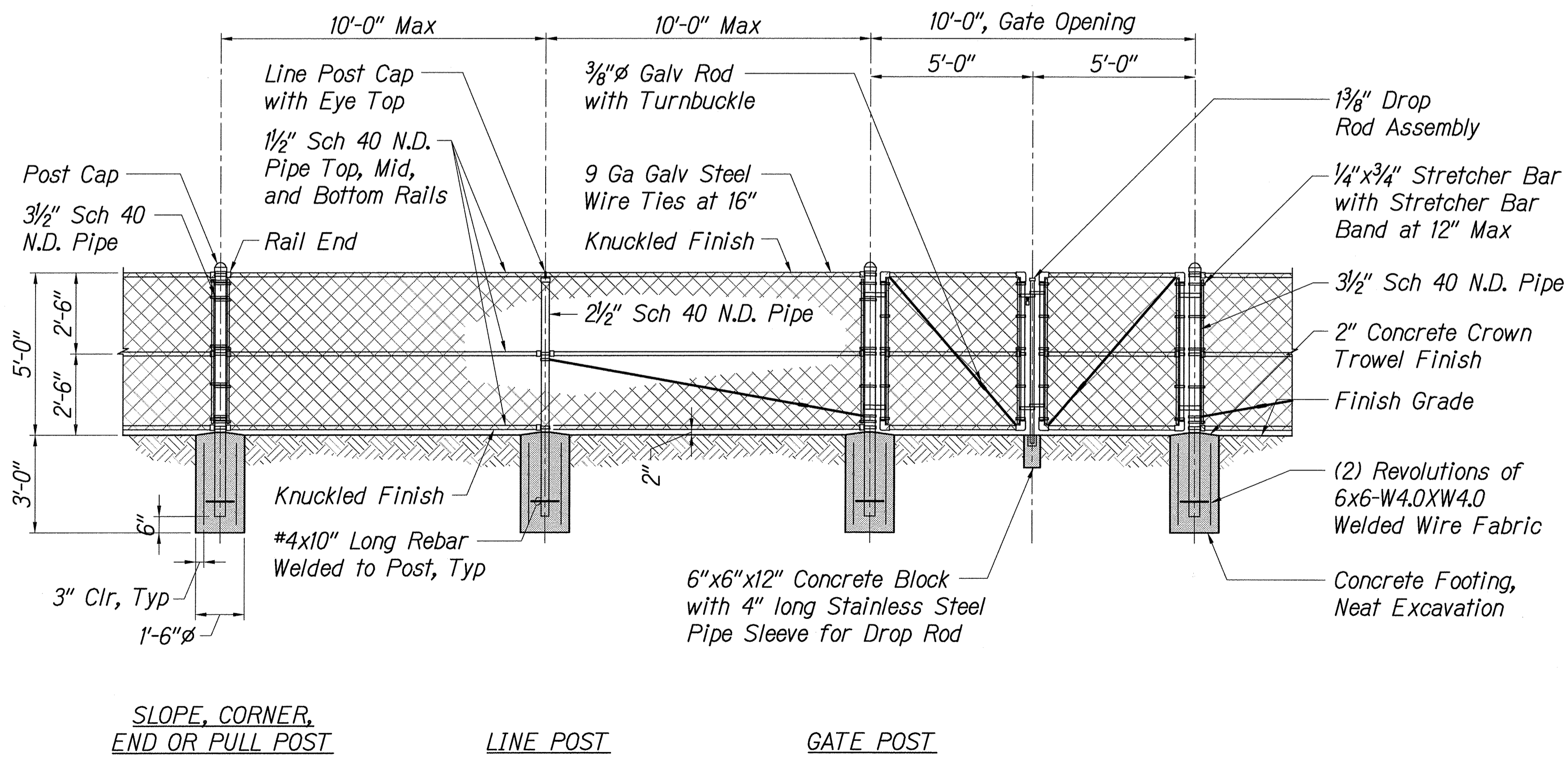
**SPLICING DETAIL**  
Not To Scale  
3  
S-7 | S-7

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION <b>CENTRAL MAUI REGIONAL SPORTS COMPLEX</b> PHASE 3 WAILUKU, MAUI, HAWAII <b>BACKSTOP DETAILS</b>					
			DESIGNED: DK DRAWN: CADD CHECKED: MH APPROVED: CHIEF ENGINEER		
SUBMITTED: -- DATE: DECEMBER 2015 SCALE: AS SHOWN DATE: DEC 2 2 2015			DRAWING NO. <b>S-7</b>		



10 FT. HIGH CHAIN LINK FENCE 1  
Scale: 3/8" = 1'-0"

Pipe Size (Nominal)	Weight/Foot (lbs)
1 1/2"	2.72
2 1/2"	5.80
3 1/2"	9.12



5 FT. HIGH CHAIN LINK FENCE 2  
Scale: 3/8" = 1'-0"

Pipe Size (Nominal)	Weight/Foot (lbs)
1 1/2"	2.72
2 1/2"	5.80
3 1/2"	9.12

- Notes:**
1. Posts and rails shall be Schedule 40 (standard weight) pipes.
  2. Sizes specified are nominal.
  3. All fencing materials and components shall be galvanized steel.
  4. Top rail couplings shall be located within 6" of line posts.
  5. Top of concrete footing shall be crowned to shed water.
  6. See Civil drawings for location of fence.

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
ENGINEERING DIVISION

**CENTRAL MAUI REGIONAL SPORTS COMPLEX  
PHASE 3  
WAILUKU, MAUI, HAWAII**

**TYPICAL FENCE DETAILS**

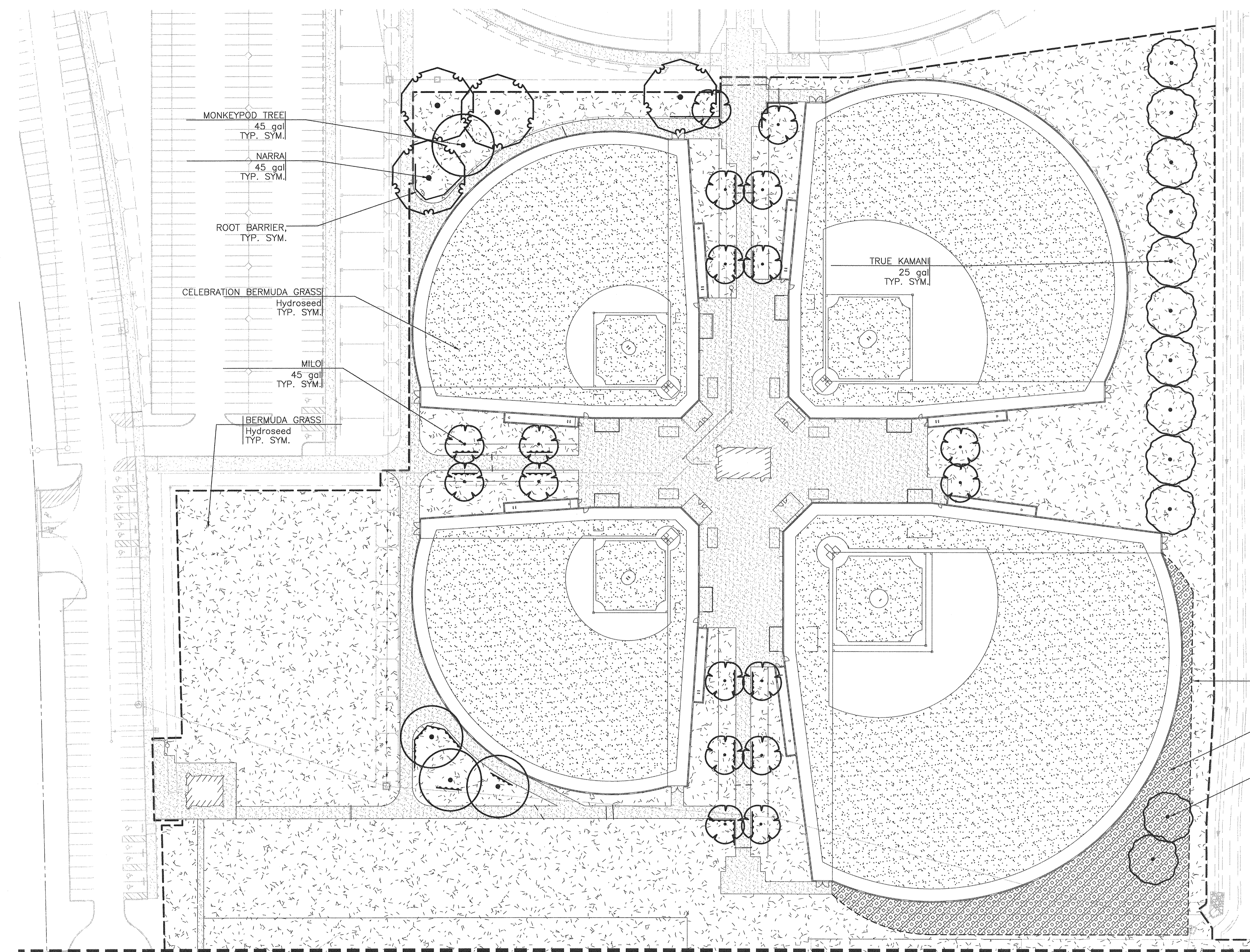
DESIGNED: DK	SUBMITTED: -- <i>KL</i>
DRAWN: CADD	DATE: DECEMBER 2015
CHECKED: MH	SCALE: AS SHOWN
APPROVED: <i>[Signature]</i> CHIEF ENGINEER	DATE: DEC 22 2015

DRAWING NO. **S-8**

# PLANT SCHEDULE

TREES	BOTANICAL NAME
	CALOPHYLLUM INOPHYLLUM
	CASSIA X NEALIAE
	PTEROCARPUS INDICUS
	SAMANEA SAMAN
	THESPESIA POPULNEA
SHRUBS	BOTANICAL NAME
	SCAEVOLA FRUTESCENS
GROUND COVERS	BOTANICAL NAME
	IPOMOEA PES-CAPRAE BRASILENSIS
SOD/SEED	BOTANICAL NAME
	CYNODON DACTYLON
	CYNODON DACTYLON 'CELEBRATION'

- MONKEYPOD TREE  
45 gal  
TYP. SYM.
- NARRA  
45 gal  
TYP. SYM.
- ROOT BARRIER,  
TYP. SYM.
- CELEBRATION BERMUDA GRASS  
Hydroseed  
TYP. SYM.
- MILO  
45 gal  
TYP. SYM.
- BERMUDA GRASS  
Hydroseed  
TYP. SYM.



- PLASTIC HEADER,  
TYP. SYM.
- BEACH MORNING GLORY  
4" pots  
TYP. SYM.
- TRUE KAMANI  
25 gal  
TYP. SYM.

MATCHLINE: SEE SHEET L-2

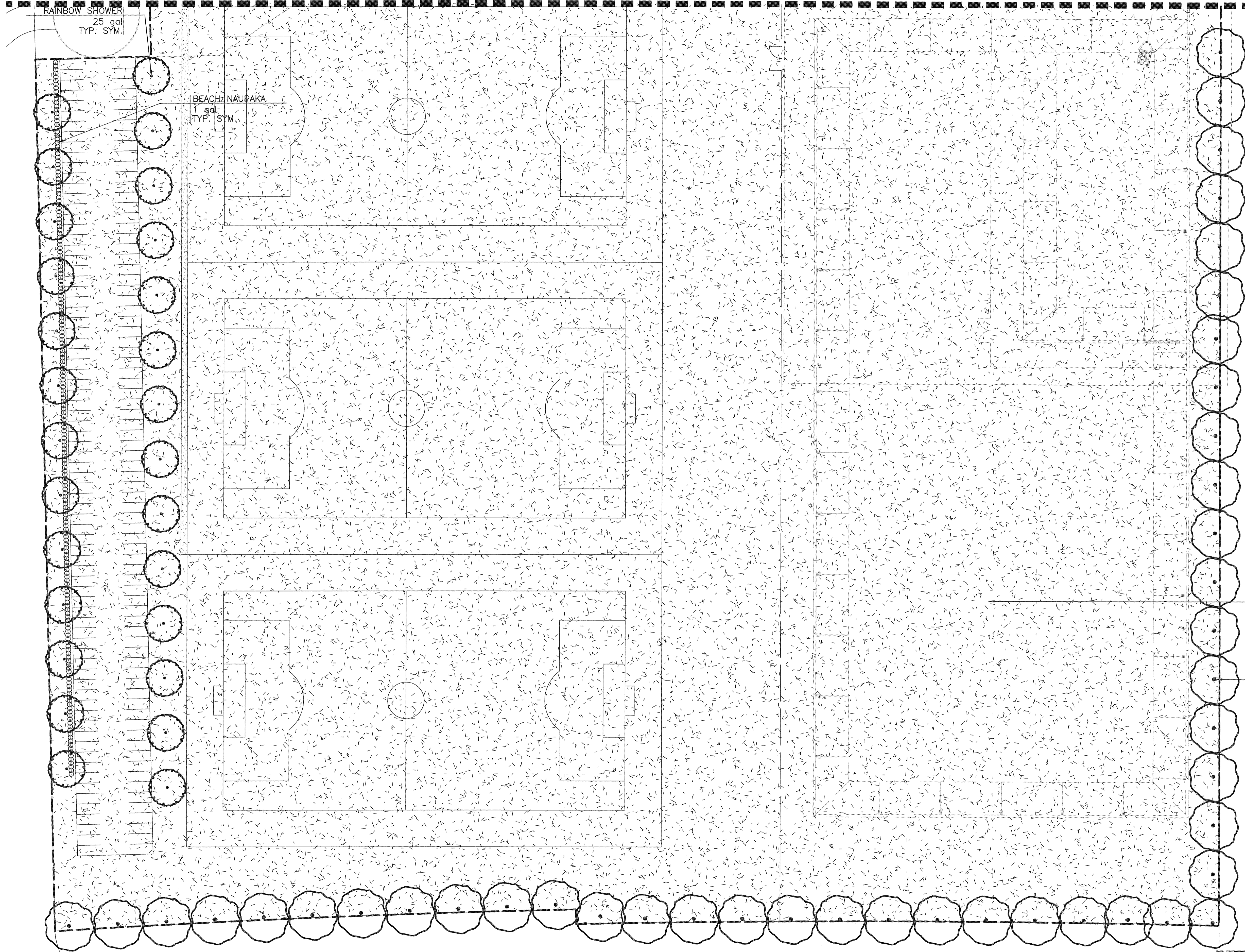
**1 PARTIAL PLANTING PLAN - 1**  
SCALE: 1" = 40'-0"

GRAPHIC SCALE: 1" = 40'-0"  
0 10 20 40 80

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION <b>CENTRAL MAUI REGIONAL SPORTS COMPLEX</b> PHASE 3 WAILUKU, MAUI, HAWAII PARTIAL PLANTING PLAN - 1					
<small>THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY SUPERVISION.</small>					
DESIGNED: GR/NN/JP		SUBMITTED: --			
DRAWN: GR/NN/JP		DATE: DECEMBER 2015			
CHECKED: GTR		SCALE: AS SHOWN			
APPROVED:		R. M. TOWILL CORPORATION CHIEF ENGINEER		DEC 22 2015 DATE	
					DRAWING NO. <b>L-1</b>

P:\PROJECTS\MAUI\Central Maui Regional Plant\GDD\John...  
 SYMB\SYMB-V-01.dwg L-1

MATCHLINE: SEE SHEET L-1



PLANT SCHEDULE

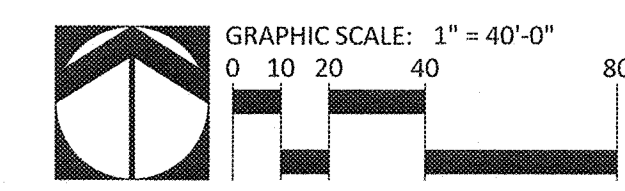
TREES	BOTANICAL NAME
	CALOPHYLLUM INOPHYLLUM
	CASSIA X NEALIAE
	PTEROCARPUS INDICUS
	SAMANEA SAMAN
	THESPIA POPULNEA
SHRUBS	BOTANICAL NAME
	SCAEVOLA FRUTESCENS
GROUND COVERS	BOTANICAL NAME
	IPOMOEA PES-CAPRAE BRASILENSIS
SOD/SEED	BOTANICAL NAME
	CYNODON DACTYLON
	CYNODON DACTYLON 'CELEBRATION'

BERMUDA GRASS  
Hydroseed  
TYP. SYM.

TRUE KAMANI  
25 gal  
TYP. SYM.

P:\PROJECTS\MAUI\Central Maui Regional Park\GADD\Phase 3\GADD\Sheet L-2.dwg L-2

1 PARTIAL PLANTING PLAN - 2  
SCALE: 1" = 40'-0"



REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION <b>CENTRAL MAUI REGIONAL SPORTS COMPLEX</b> PHASE 3 WAILUKU, MAUI, HAWAII PARTIAL PLANTING PLAN - 2					
		DESIGNED: GR/NN/JP DRAWN: GR/NN/JP CHECKED: GTR APPROVED:			
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. SIGNATURE:  EXP. DATE: 7/30/16		SUBMITTED: -- ✓ DATE: DECEMBER 2015 SCALE: AS SHOWN		DRAWING NO. L-2 DATE: DEC 22 2015	
R. M. TOWILL CORPORATION CHIEF ENGINEER					

# PLANTING NOTES

- LANDSCAPE CONTRACTOR SHALL FIELD VERIFY ALL PLANT QUANTITIES AND DIMENSIONS PRIOR TO INSTALLATION. QUANTITIES SHOWN ON PLANT LIST AND MATERIAL SCHEDULES ARE FOR REFERENCE ONLY, VERIFY ACTUAL QUANTITIES AS SHOWN ON PLAN. IF THERE IS A DISCREPANCY, THE PLANTING PLAN SHALL TAKE PRECEDENCE.
- LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING EXISTING UTILITIES.
- PRIOR TO TREE AND SHRUB HOLE EXCAVATION, ALL PLANTING LOCATIONS SHALL BE STAKED OUT BY CONTRACTOR FOR APPROVAL BY LANDSCAPE ARCHITECT. DO NOT PLANT UNTIL GROUND HAS BEEN PREPARED AND FREE OF STONES GREATER THAN 1/2", DIA., SITE IS NEAT, ORDERLY, AND THE LANDSCAPE ARCHITECT ACCEPTS SITE FOR PLANTING.
- NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES IN PLANT LOCATIONS OR INSUFFICIENT PLANT QUANTITIES DUE TO DIFFERENCE IN PLANS AND ACTUAL FIELD CONDITIONS.
- NOTIFY LANDSCAPE ARCHITECT 30 DAYS PRIOR TO PLANTING OPERATIONS FOR APPROVAL OF ALL PLANT MATERIAL AT PLACE OF GROWTH. ALL PLANT MATERIAL NOT APPROVED BY THE LANDSCAPE ARCHITECT WILL BE SUBJECT TO REJECTION. THE LANDSCAPE ARCHITECT WILL INSPECT PLANTS AT THE PLACE OF GROWTH AND AFTER THE DELIVERY TO THE PROJECT. EACH TREE SHALL BE TAGGED BY THE LANDSCAPE ARCHITECT. TREES DELIVERED TO THE PROJECT WITHOUT LANDSCAPE ARCHITECT'S TAG WILL BE REJECTED.
- PLANTS SHALL MEET SIZE INDICATED BY MINIMUM HEIGHT AND SPREAD. PLANTS SHALL BE STRAIGHT AND UNIFORMLY SHAPED, UNLESS UNIQUE OR SPECIAL CHARACTERISTICS ARE SPECIFIED, AND SHALL BE UNDAMAGED, SOUND, HEALTHY, VIGOROUS AND FREE OF DISEASE AND INSECT INFESTATION. PLANTS NOT CONFORMING TO THESE REQUIREMENTS ON DELIVERY TO THE PROJECT AND AT THE END OF THE PLANT ESTABLISHMENT PERIOD WILL BE REJECTED.
- CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE COMPLETE REMOVAL AND DAMAGES RESULTING FROM PLANTING ANY PLANT SPECIES LISTED ON THE HAWAII DEPARTMENT OF AGRICULTURE 'NOXIOUS WEED RULES' AS DEFINED IN THE STATUTE, HAWAII ADMINISTRATIVE RULES 4:68:1 OR THE 'FEDERAL NOXIOUS WEED LIST' AS DEFINED IN TITLE 7 OF THE CODE OF FEDERAL REGULATIONS (CFR), PARTS 360 AND 361.
- ALL TREE WORK MUST ADHERE TO AMERICAN NATIONAL STANDARD INSTITUTE (OR ANSI) - A300 TREE CARE STANDARDS AND ANSI-Z133 SAFETY STANDARDS FOR TREE WORK. WORK SHALL BE CONTRACTED TO ARBORISTS THAT HAS BEEN CERTIFIED IN GOOD STANDINGS AS AN ISA CERTIFIED ARBORIST FOR AT LEAST 5 YEARS TO ASSURE THAT TREE WORK IS PERFORMED PROPERLY AND TREES ARE NOT DAMAGED BY PRACTICES SUCH AS TOPPING, FLUSH CUTS, OVER-THINNING, OR CLIMBING WITH SPIKES. CONTRACTOR SHALL SUBMIT A COPY OF THE ISA ARBORIST CERTIFICATION OF GOOD STANDING OF 5 YEARS TO THE LANDSCAPE ARCHITECT A MINIMUM OF 7 DAYS PRIOR TO TREE PRUNING.
- FOR THE DURATION OF CONSTRUCTION WITHIN THE DRIP LINE OF TREES TO REMAIN THERE MUST BE: NO CHANGES, ALTERATIONS OR DISTURBANCE TO THE GRADE BY ADDING FILL, EXCAVATING OR SCRAPING EXCEPT AS NOTED ON PLANS; NO STORAGE OF CONSTRUCTION MATERIAL OR EQUIPMENT; NO STOCKPILING OF ANY CONSTRUCTION MATERIAL OR ANY EXCAVATED MATERIAL NO DISPOSAL OF ANY LIQUIDS (E.G. CONCRETE SLEUTH, GAS, OIL, PAINT); NO VEHICULAR TRAFFIC, EQUIPMENT OR EXCESSIVE PEDESTRIAN TRAFFIC NO ATTACHMENT OF ANY WIRES, ROPES, LIGHTS, OR ANY OTHER SUCH ATTACHMENT OTHER THAN THOSE OF PROTECTIVE NATURE TO ANY TREE TO BE PRESERVED; AND NO CLEANING OF EQUIPMENT OR MATERIAL UNDER THE CANOPY OF ANY TREE OR GROUP OF TREES TO REMAIN.
- PROTECTIVE FENCE SHALL BE ERECTED AROUND TREES IDENTIFIED ON PLAN OR TREES WITH TRUNK DIAMETER GREATER THAN 24 INCHES AS MEASURED AT HEIGHT OF 4 1/2 FEET. PROTECTIVE FENCE SHALL BE 4 FEET HIGH ORANGE PLASTIC MESH OR APPROVED EQUIVALENT SUPPORTED ON STEEL T-POST A MINIMUM OF 6 FEET LONG. PROTECTIVE FENCE SHALL SURROUND TREE AT MINIMUM OF 10 FEET FROM TREE TRUNK WITH STEEL T-POST AT A MINIMUM OF 5 FEET ON CENTER.
- IF TREES OTHER THAN THOSE SPECIFICALLY DESIGNATED FOR REMOVAL ARE DAMAGED BEYOND SURVIVAL CONDITIONS AS DETERMINED BY THE LANDSCAPE ARCHITECT, THE CONTRACTOR SHALL REMOVE SUCH TREES AND REPLACE THE TREE WITH A SAME SPECIES AND SIZE AND MAINTAIN FOR THE DURATION OF CONSTRUCTION OR 12 MONTHS WHICHEVER IS GREATER AT NO COST TO THE OWNER.
- PROVIDE AN EVEN LAYER OF PLANTING SOIL OVER ALL PLANTING AREAS. REFER TO THE SPECIFICATIONS FOR TOPSOIL MIXTURE DEPTH. REPRESENTATIVE SAMPLES OF SOIL FROM PROJECT SITE SHALL BE SUBMITTED TO A LABORATORY ACCEPTABLE TO THE LANDSCAPE ARCHITECT FOR ANALYSIS OF REQUIRED SOIL AMENDMENTS. TEST RESULTS AND FERTILIZATION SCHEDULE SHALL BE PRESENTED TO THE LANDSCAPE ARCHITECT FOR REVIEW AND ACCEPTANCE BEFORE PLACING PLANTING SOIL. UNIFORMLY DISTRIBUTE FERTILIZER AND AMENDMENTS OVER PLANTING AREAS AS RECOMMENDED BY THE SOIL ANALYSIS REPORT. ROTOTILL TOP LAYER OF SOIL TO EVENLY INCORPORATE FERTILIZER AND AMENDMENTS.
- GUY WIRES, FLAGGING, STAKES, WINDBREAKERS, ETC. SHALL BE MAINTAINED AND REPLACED IF NECESSARY BY THE CONTRACTOR UNTIL THE TREE OR SHRUB IS ABLE TO STAND BY ITSELF. THE CONTRACTOR SHALL REMOVE AND DISPOSE AT THE END OF PLANT ESTABLISHMENT PERIOD.
- AFTER INSTALLATION OF PLANTING & IRRIGATION, LANDSCAPE CONTRACTOR TO PROVIDE MARK-UP INFORMATION OF ANY CHANGES MADE IN THE FIELD TO THE FINAL DESIGN PLANS.
- 6 MONTHS AFTER GRASS ESTABLISHMENT, CONTRACTOR SHALL TOP DRESS ALL GRASSED AREAS WITHIN ALL PLAY FIELDS WITH A 1" EVEN LAYER OF SAND AND ROLLED TO MAINTAIN AN EVEN AND LEVEL PLAY FIELD. 9 MONTHS AFTER GRASS ESTABLISHMENT, CONTRACTOR SHALL TOP DRESS ALL GRASSED AREAS WITHIN ALL PLAY FIELDS WITH AN ADDITIONAL 1" EVEN LAYER OF SAND AND ROLLED TO MAINTAIN AN EVEN AND LEVEL PLAY FIELD.

# LITTLE FIRE ANT PREVENTION PROGRAM

- LANDSCAPE CONTRACTOR WILL NOTIFY LANDSCAPE ARCHITECT OF RECORD AND THE OWNER'S REPRESENTATIVE PRIOR TO DELIVERY OF ANY PLANT MATERIALS TO THE PROJECT.
- LANDSCAPE CONTRACTOR WILL SUBMIT A PLAN TO THE LANDSCAPE ARCHITECT AND THE OWNER'S REPRESENTATIVE FOR APPROVAL TO PREVENT IMPORTATION OF LITTLE FIRE ANT (LFA) ONTO THE PROPERTY, I.E. PROVIDE QUARANTINE OR A HOLDING AREA FOR 6 WEEKS BEFORE PLANT DELIVERY TO PROJECT SITE.
- LANDSCAPE CONTRACTOR WILL BUY PLANTS OR PLANTING MATERIALS ONLY FROM FIRE ANT-FREE NURSERIES AND SUPPLIERS.
- LANDSCAPE CONTRACTOR WILL TEST FOR LFA AND IDENTIFY THE SPECIES CORRECTLY. CONSULT WEBSITE: WWW.LITTLEFIREANTS.COM FOR TESTING METHODS AND SPECIES IDENTIFICATION.
- LANDSCAPE CONTRACTOR WILL BAIT AND ALLOW AT LEAST 2 WEEKS FOR THE BAIT TO BE CARRIED BACK TO THE COLONY FOR ALL PLANTS AND NURSERY MATERIALS AT THE SUPPLYING NURSERIES REGARDLESS OF THE FIRE ANT-FREE CLAIM.
- LANDSCAPE CONTRACTOR WILL APPLY A BARRIER TREATMENT, FOLLOWING THE BAITING, TO ALL NURSERY MATERIALS AT THE SUPPLYING NURSERIES REGARDLESS OF THE FIRE ANT-FREE CLAIM.
- LANDSCAPE CONTRACTOR WILL DRENCH ALL SOILS OR LOOSE NURSERY MATERIALS WITH THE PROPER MIXTURE OF SEVIN PER GALLON OF WATER INDICATED BY THE MANUFACTURER AND FOLLOW MANUFACTURER'S SAFETY PRECAUTIONS.

# GENERAL PROJECT NOTES:

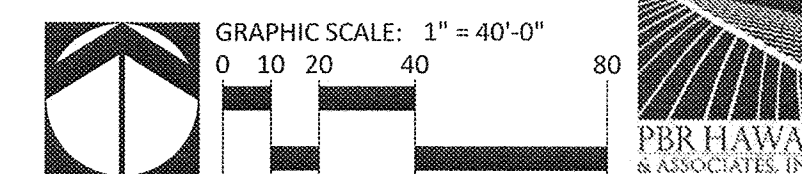
- THESE NOTES ARE TO BE USED FOR GENERAL REFERENCE IN CONJUNCTION WITH, AND AS A SUPPLEMENT TO ANY WRITTEN SPECIFICATIONS, APPROVED ADDENDA, AND CHANGE ORDERS ASSOCIATED WITH THESE LANDSCAPE CONSTRUCTION DOCUMENTS.
- A QUALIFIED SUPERVISOR SHALL BE PRESENT ON SITE AT ALL TIMES DURING DEMOLITION.
- THE LANDSCAPE CONTRACTOR SHALL COORDINATE ALL WORK WITH RELATED CONTRACTORS AND WITH THE GENERAL CONSTRUCTION OF THE PROJECT IN ORDER NOT TO IMPEDE THE PROGRESS OF THE WORK OF OTHERS OR THE CONTRACTOR'S OWN WORK. IT IS THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO COORDINATE ALL CONSTRUCTION ELEMENT LOCATIONS WITH OTHER TRADES PRIOR TO INSTALLATION. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE LOCATIONS OF EXISTING AND FUTURE UNDERGROUND SERVICES AND IMPROVEMENTS WHICH MAY CONFLICT WITH THE WORK TO BE DONE. NOTIFY THE OWNER OR LANDSCAPE ARCHITECT (LA) IMMEDIATELY SHOULD CONFLICTS ARISE.
- OBSERVATION VISITS TO THE JOB SITE BY THE LANDSCAPE ARCHITECT DO NOT INCLUDE INSPECTIONS OF CONSTRUCTION METHODS AND SAFETY CONDITIONS AT THE WORK SITE. THESE VISITS SHALL NOT BE CONSTRUED AS CONTINUOUS AND DETAILED INSPECTIONS.
- VERIFY CRITICAL DIMENSIONS, REFERENCE POINT LOCATIONS AND CONSTRUCTION CONDITIONS PRIOR TO INITIATING CONSTRUCTION. NOTIFY THE OWNER AND LA) IMMEDIATELY SHOULD CONFLICTS ARISE.
- CONSTRUCTION DETAILING, MATERIALS, EQUIPMENT AND PRODUCTS OTHER THAN THOSE SPECIFIED WITHIN THESE PLANS MAY BE CONSIDERED FOR USE PROVIDED PRIOR WRITTEN APPROVAL IS OBTAINED FROM OWNER, THE LA OR THE APPLICABLE GOVERNING AUTHORITY (AS REQUIRED) PRIOR TO IMPLEMENTATION.
- AREAS TO BE PROTECTED FROM GRADING OR CONSTRUCTION DISTURBANCE ARE FENCED OR ROPED-OFF WITH YELLOW ROPES AS PER PLANS BY OWNER AND APPROVED BY LA PRIOR TO CONSTRUCTION. CONTRACTOR SHALL PERFORM ALL CONSTRUCTION ACTIVITY OUTSIDE OF PROTECTED AREAS AND SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF PROTECTED AREAS ON A DAILY BASIS. DAMAGED AREAS THAT HAVE BEEN DESIGNATED TO BE PROTECTED SHALL BE RESTORED TO ORIGINAL CONDITIONS AT CONTRACTORS EXPENSE.
- LANDSCAPE CONTRACTOR (LC) SHALL BE FAMILIAR WITH AND ADHERE TO ALL LOCAL, STATE AND FEDERAL CODES AND REGULATIONS PERTAINING TO THE PROJECT WORK. ANY CONFLICTS MUST BE BROUGHT TO THE ATTENTION OF THE LA IMMEDIATELY.
- LC SHALL INSPECT THE CONDITION OF EXISTING WORK FOR DEFECTS PRIOR TO BEGINNING WORK. ALL HARDSCAPE WILL BE REVIEWED DURING THE FINAL ACCEPTANCE WALK. ANY DAMAGE DUE TO THE LC WORK SHALL BE REPAIRED AT THEIR EXPENSE.
- WHERE 2 OR MORE REQUIREMENTS CREATE OVERLAPPING CONDITIONS, CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE LA OR OWNER'S REPRESENTATIVE IMMEDIATELY FOR INTERPRETATION.

# SPECIAL NOTE - COQUI FROG

(ELEUTHERODACTYLUS COQUI AND/OR ELUTHERODACTYLUS PLANROSTRIS:





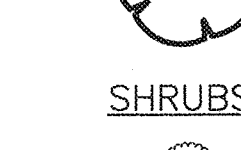


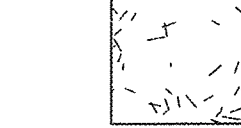

- PRIOR TO TRANSPORT TO THE PROJECT, INSPECT, TAKE PRECAUTIONS, AND CERTIFY THAT PLANT MATERIALS, EQUIPMENT AND VEHICLES ARE FREE OF COQUI FROGS AND/OR THEIR EGGS.
- IN THE EVENT OF THE PRESENCE OF COQUI FROGS AND/OR THEIR EGGS, THEY SHALL BE COMPLETELY DESTROYED AND REMOVED AND THE PLANT MATERIAL, EQUIPMENT, OR VEHICLE TREATED AS RECOMMENDED BY THE STATE AND RE-INSPECTED.
- REPORT PRESENCE OF COQUI FROGS OR EGGS TO THE HAWAII DEPT. OF AGRICULTURE PEST HOTLINE AT (808) 643-PEST (7378), OR THE MAUI INVASIVE SPECIES COMMITTEE (MISC) PH. (808) 573-6472 OR EMAIL: MISCPR@HAWAII.EDU

P:\PROJECTS\MAUI\Central Maui Regional Park\CD00\Notes





REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
<b>STATE OF HAWAII</b> <b>DEPARTMENT OF LAND AND NATURAL RESOURCES</b> <b>ENGINEERING DIVISION</b> <b>CENTRAL MAUI REGIONAL SPORTS COMPLEX</b> <b>PHASE 3</b> <b>WAILUKU, MAUI, HAWAII</b>					
<b>PLANTING NOTES</b>					
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.			DESIGNED: GR/NN/JP SUBMITTED: -- <input checked="" type="checkbox"/>		
SIGNATURE: <i>Russell Y.J. Chung</i> EXP. DATE: 4/30/16			DRAWN: GR/NN/JP DATE: DECEMBER 2015		
APPROVED: <i>[Signature]</i> CHIEF ENGINEER			CHECKED: GTR SCALE: AS SHOWN		
R. M. TOWILL CORPORATION <small>Quality - Customer Service - Integrity - Safety - Excellence</small>			DEC 2 2 2015 DATE		DRAWING NO. <b>L-3</b>

# PLANT SCHEDULE

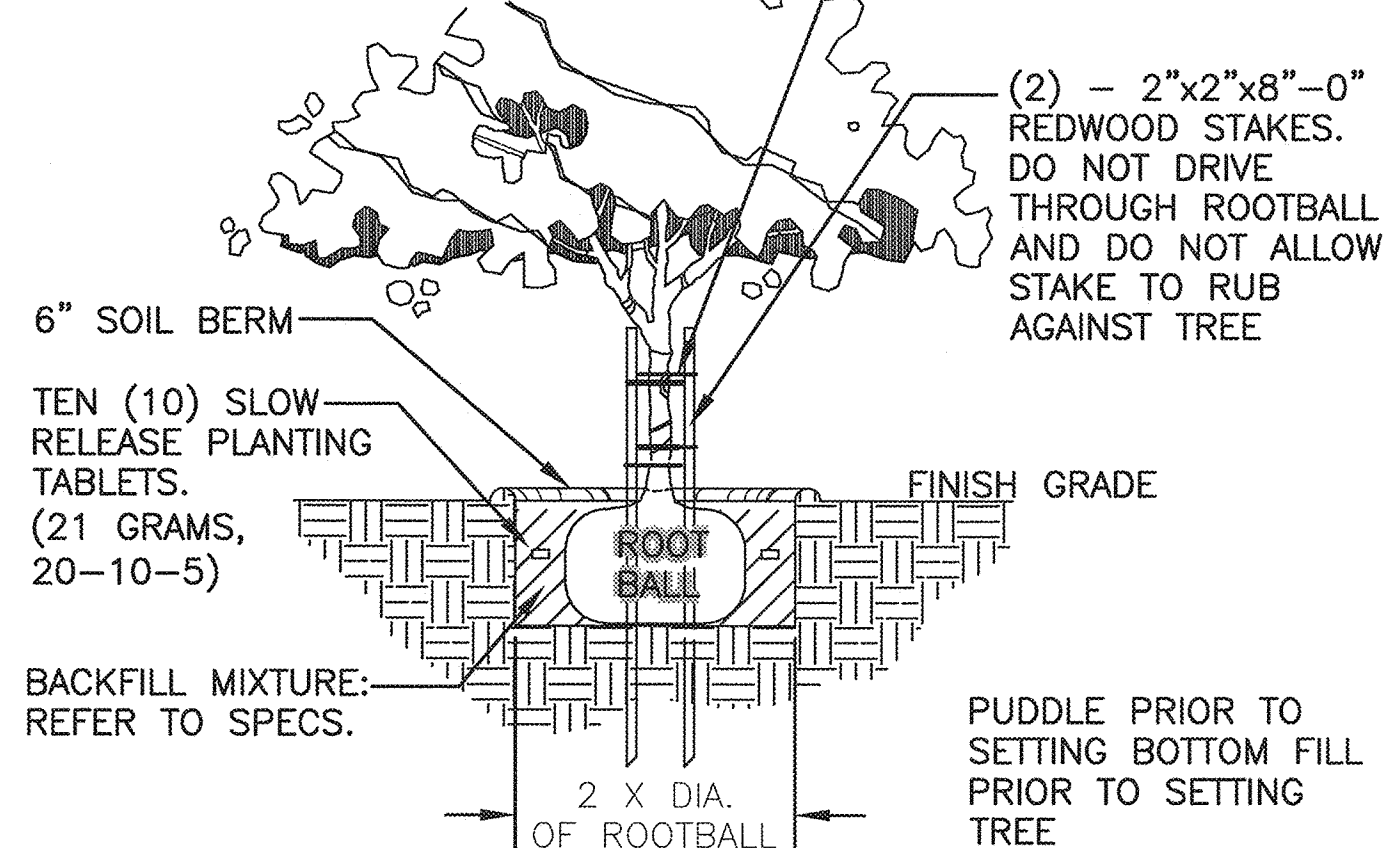
TREES	QTY	COMMON NAME	BOTANICAL NAME	CONT	
	55	TRUE KAMANI	CALOPHYLLUM INOPHYLLUM	25 GAL	
	27	RAINBOW SHOWER	CASSIA X NEALIAE	25 GAL	
	4	NARRA	PTEROCARPUS INDICUS	45 GAL	
	4	MONKEYPOD TREE	SAMANEA SAMAN	45 GAL	
	18	MILO	THESPESIA POPULNEA	45 GAL	
SHRUBS	QTY	COMMON NAME	BOTANICAL NAME	CONT	
	196	BEACH NAUPAKA	SCAEVOLA FRUTESCENS	1 GAL	
GROUND COVERS	QTY	COMMON NAME	BOTANICAL NAME	CONT	SPACING
	17,779 SF	BEACH MORNING GLORY	IPOMOEA PES-CAPRAE BRASILENSIS	4" POTS	18" o.c.
SOD/SEED	QTY	COMMON NAME	BOTANICAL NAME	CONT	SPACING
	921,116 SF	BERMUDA GRASS	CYNODON DACTYLON	HYDROSEED	
	176,545 SF	CELEBRATION BERMUDA GRASS	CYNODON DACTYLON 'CELEBRATION'	HYDROSEED	

# REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION	QTY	DETAIL
	ROOT BARRIER	412 LF	
	PLASTIC HEADER	613 LF	
	2" LAYER SOIL AMENDMENT	1,115,437 SF	
	4" LAYER IMPORTED TOP SOIL (BALL FIELDS)	2,177 CY	
	2" LAYER IMPORTED TOP SOIL	4,464 CY	
	2" LAYER MULCH	17,779 SF	
	1" LAYER SAND AMENDMENT AT 6 MONTHS*	545 CY	
	1" LAYER SAND AMENDMENT AT 9 MONTHS*	545 CY	

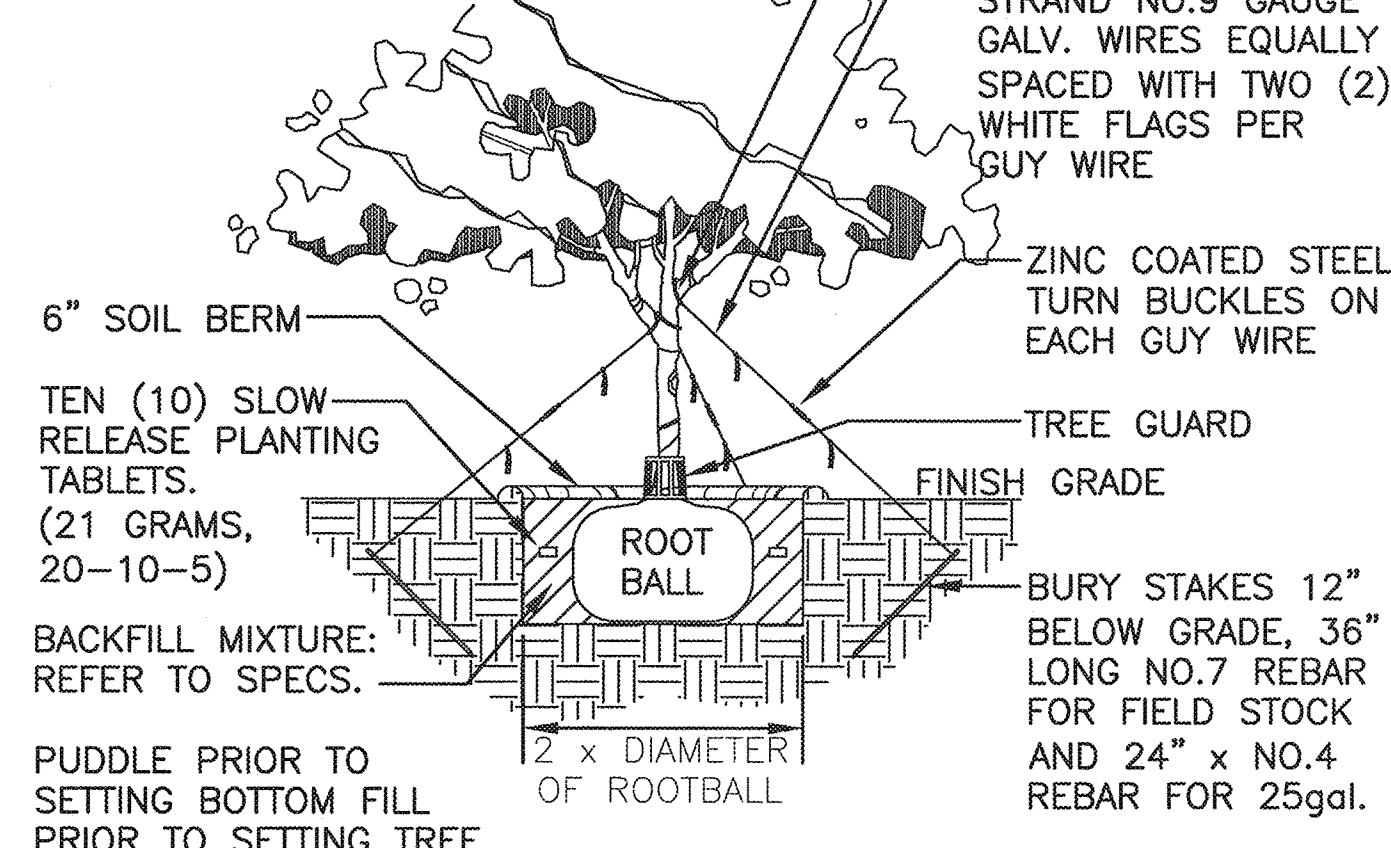
\*NOTE:  
REFER TO PLANTING NOTES, SHEET L-3  
NOTE 15 FOR SAND TOP DRESSING.

NOTE:  
TRUNK MUST BE PROTECTED FROM ROPE SLING BURNS AND ABRASIONS DURING MOVING. TREE SHALL BE PLUMB. IF TREE IS LEANING AT THE END OF THE PLANT ESTABLISHMENT PERIOD, THE TREE SHALL BE REJECTED.

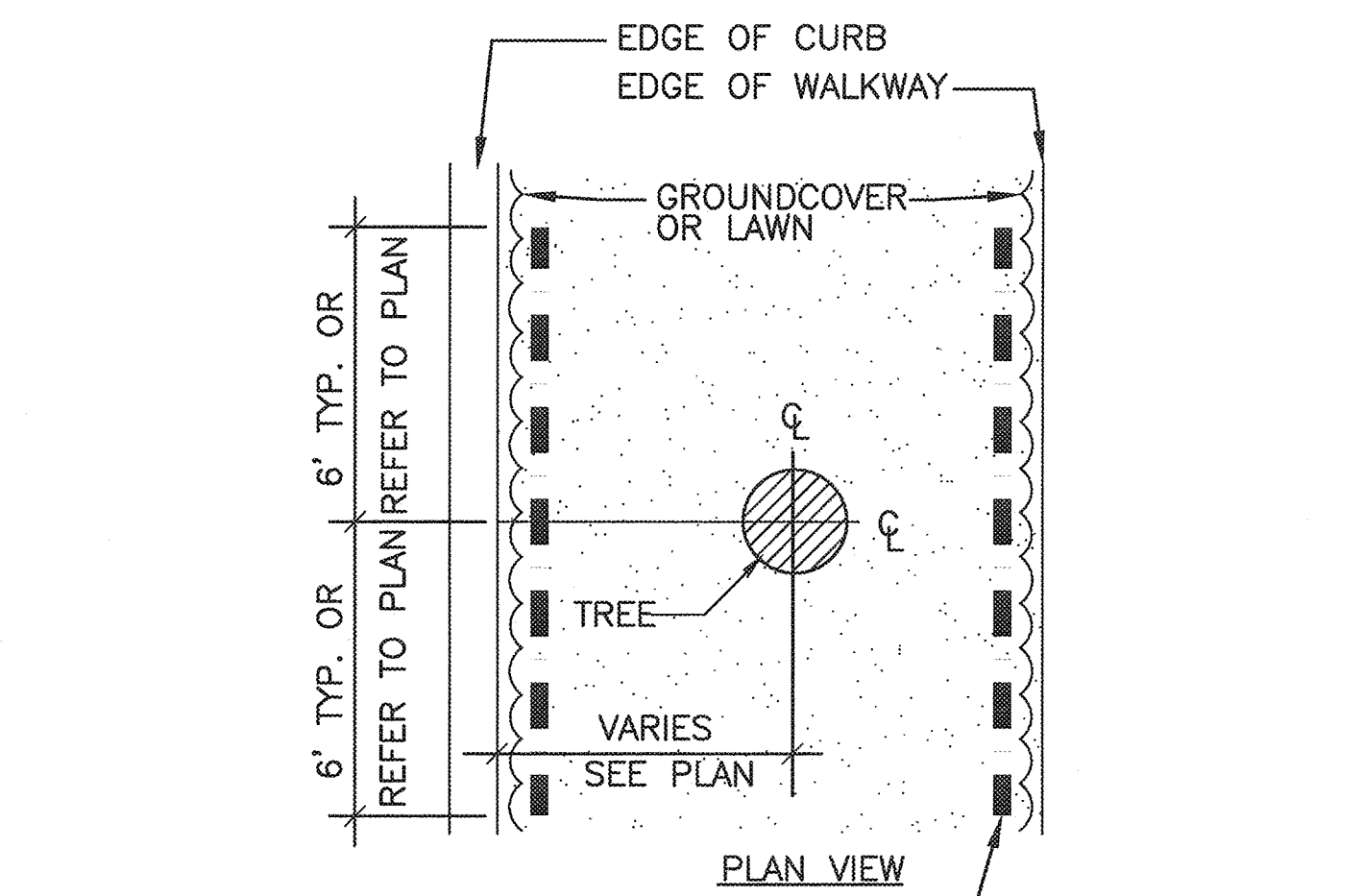


1 TREE PLANTING AND DOUBLE STAKING  
NOT TO SCALE M2921.01-02

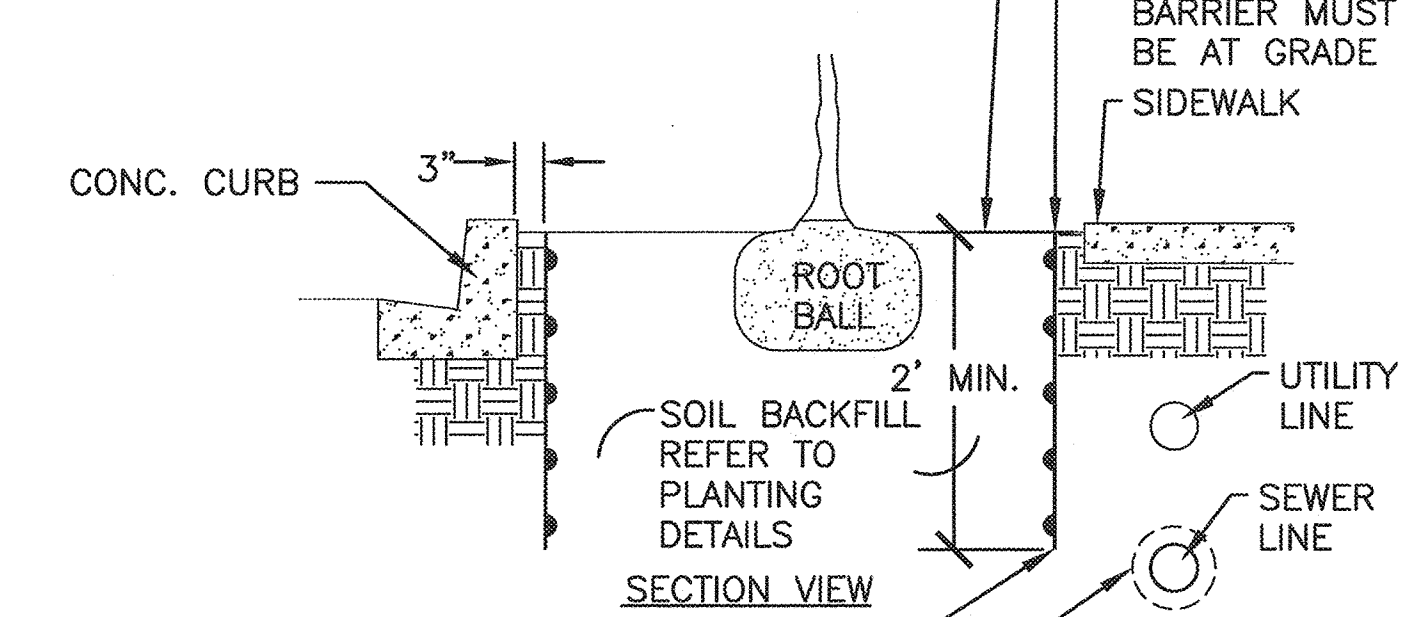
NOTE:  
TRUNK MUST BE PROTECTED FROM ROPE SLING BURNS AND ABRASIONS DURING MOVING. TREE SHALL BE PLUMB. IF TREE IS LEANING AT THE END OF THE PLANT ESTABLISHMENT PERIOD, THE TREE SHALL BE REJECTED.



2 TREE PLANTING AND GUYING  
NOT TO SCALE M2921.01-09



UB 24-2 DEEPROOT BARRIER (OR APPROVED EQUAL), PLACE PARALLEL AND AGAINST THE SIDEWALK AND CURB EDGE. INSTALL PER MANUFACTURERS RECOMMENDATION



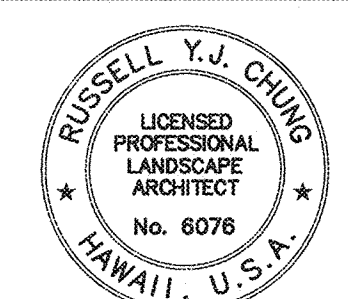
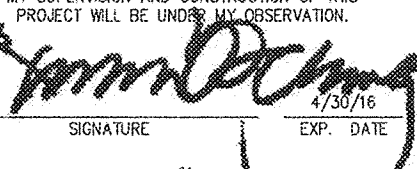

UB 24-2 DEEPROOT BARRIER (OR APPROVED EQUAL), PLACE PARALLEL AND AGAINST THE SIDEWALK AND CURB EDGE. INSTALL PER MANUFACTURERS RECOMMENDATION

TYPAR BIOBARRIER PROTECTION FABRIC (OR APPROVED EQUAL). INSTALL PER MANUFACTURERS RECOMMENDATION. WWW.BIOBARRIER.COM

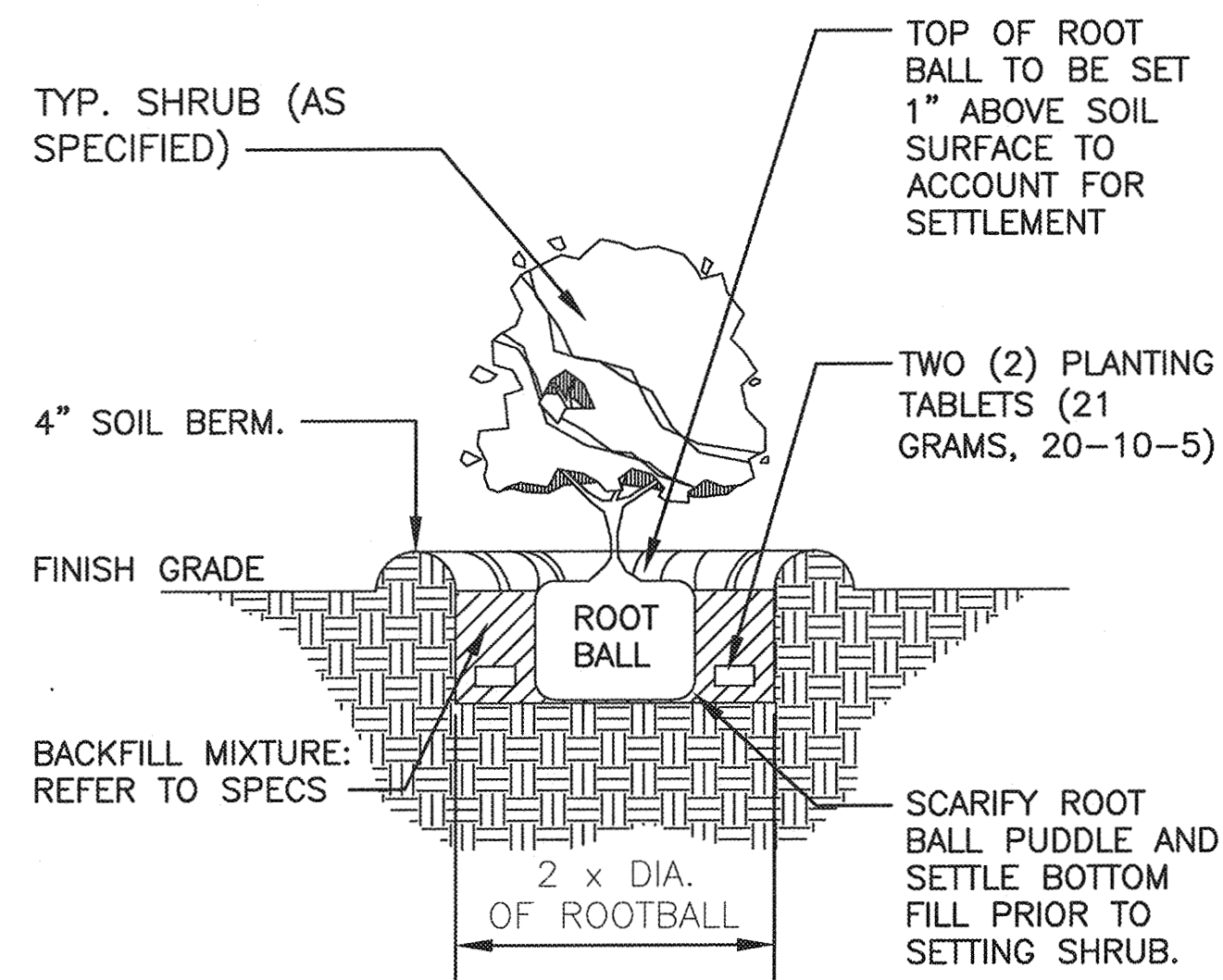
NOTE:  
LANDSCAPE CONTRACTOR SHALL INSTALL 4 FT. DEPTH RIGID ROOT BARRIER AT STREET TREES LOCATED WITHIN 10 HORIZONTAL FEET OF UNDERGROUND UTILITIES.

NOTE:  
SEWER LINES LOCATED WITHIN 10 HORIZONTAL FEET OF A STREET TREE SHALL BE WRAPPED WITH BIOBARRIER PROTECTION FABRIC BY THE SITE CONTRACTOR.

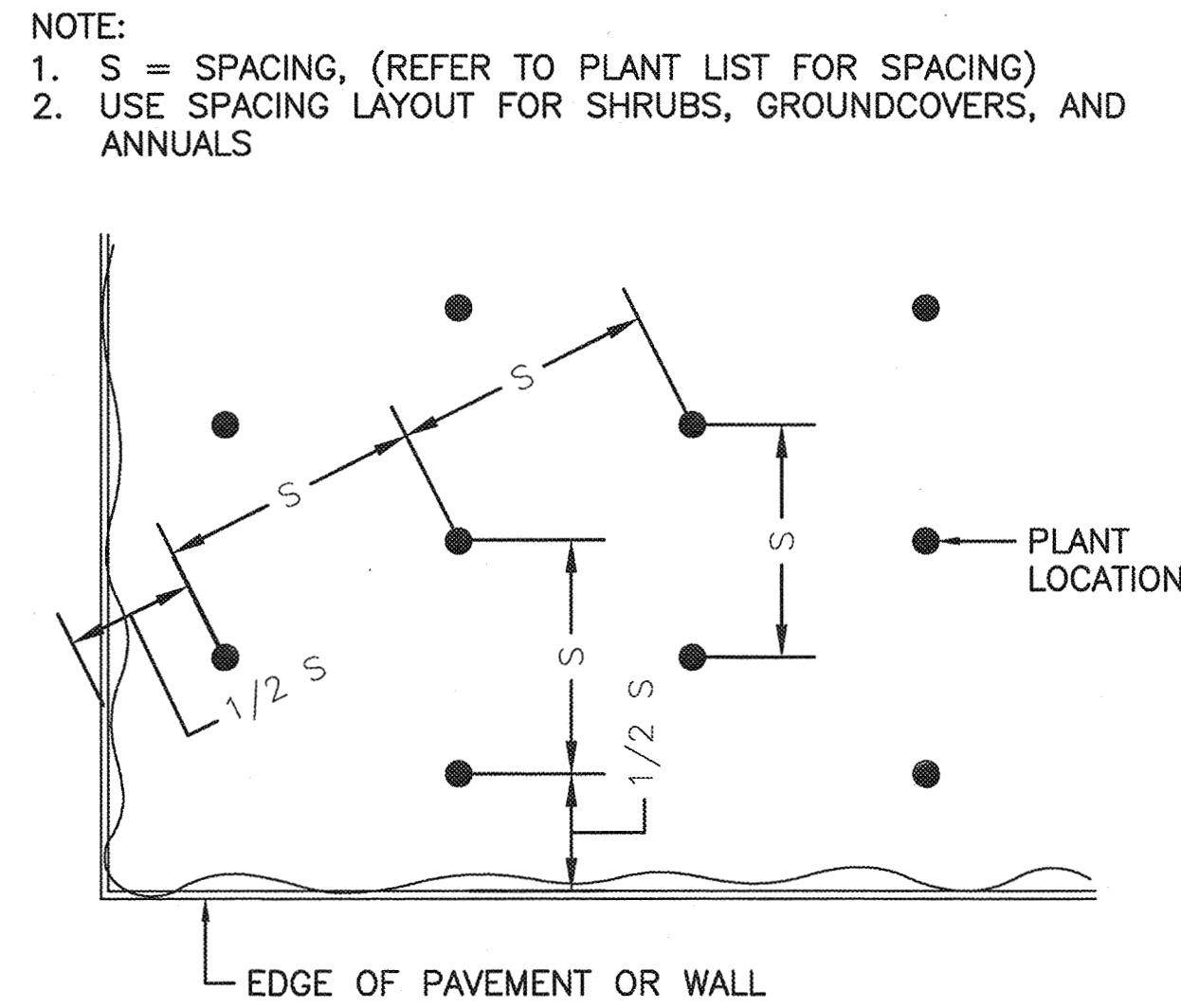
3 DEEP ROOT BARRIER DETAIL  
NOT TO SCALE M2921.01-01

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION <b>CENTRAL MAUI REGIONAL SPORTS COMPLEX</b> PHASE 3 WAILUKU, MAUI, HAWAII PLANTING DETAILS - 1					
 RUSSELL Y.J. CHUNG LICENSED PROFESSIONAL LANDSCAPE ARCHITECT No. 6076 HAWAII, U.S.A.		THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.  R. M. TOWILL CORPORATION CHIEF ENGINEER			
DESIGNED:	GR/NN/JP	SUBMITTED:	--		
DRAWN:	GR/NN/JP	DATE:	DECEMBER 2015		
CHECKED:	GTR	SCALE:	AS SHOWN		
APPROVED:		DATE:	DEC 2 2 2015		
		DRAWING NO.	L-4		

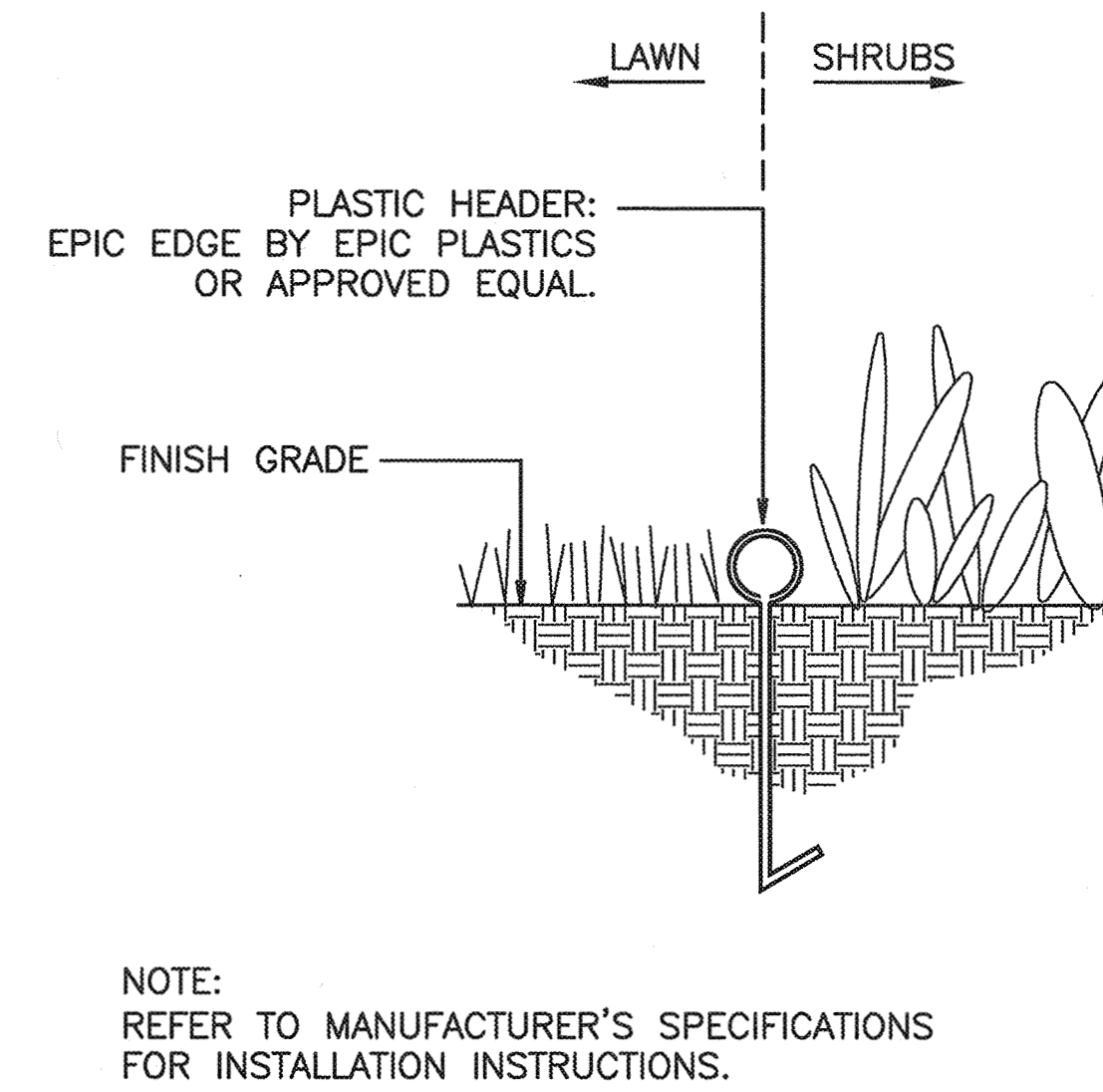
PROJECT: MAUI Central Maui Regional Plant/Grass/Grass  
 3/20/2015/11-01.dwg L-4



1 SHRUB PLANTING  
NOT TO SCALE M2921.01-04

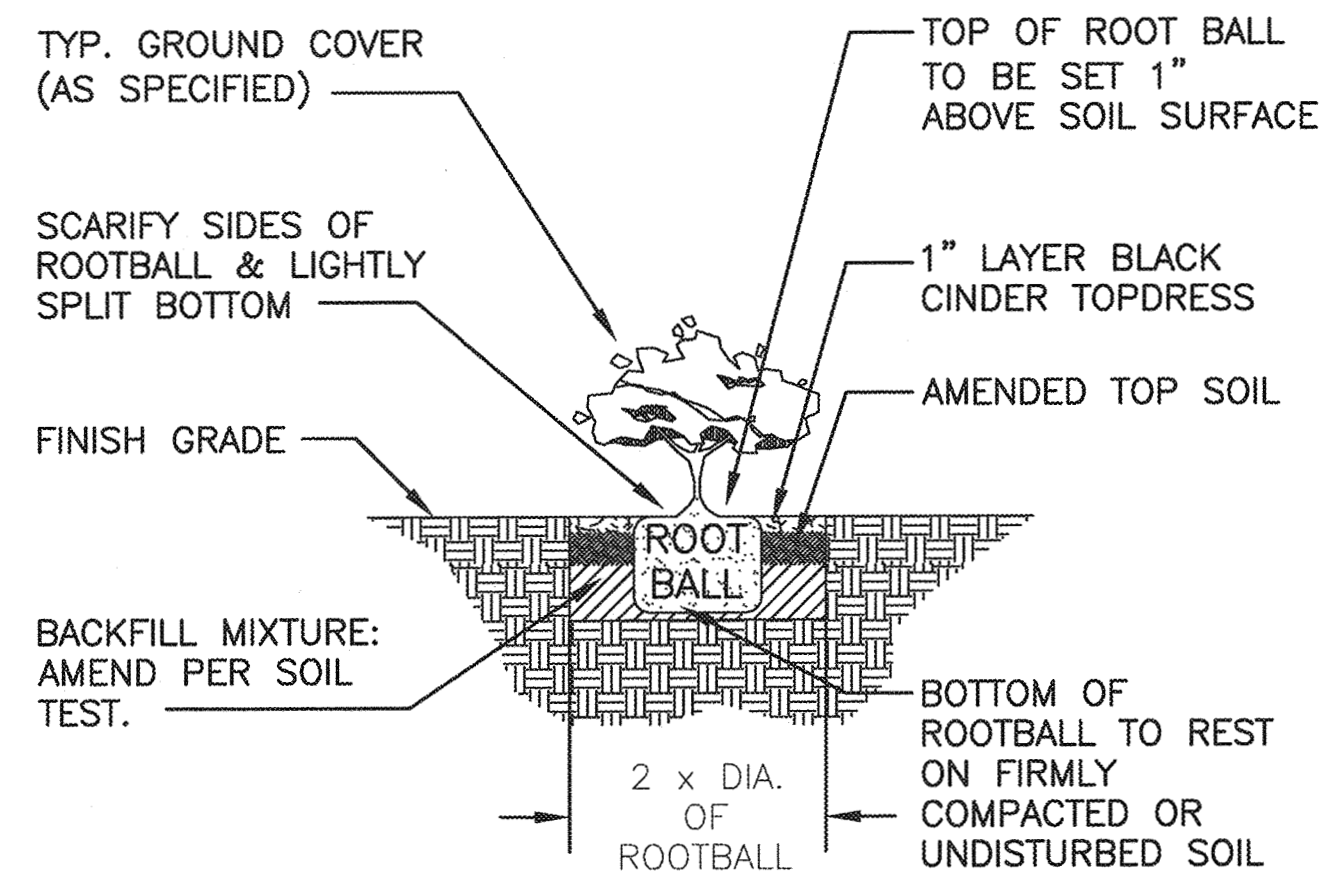


3 TRIANGULAR SPACING  
NOT TO SCALE M2921.01-05

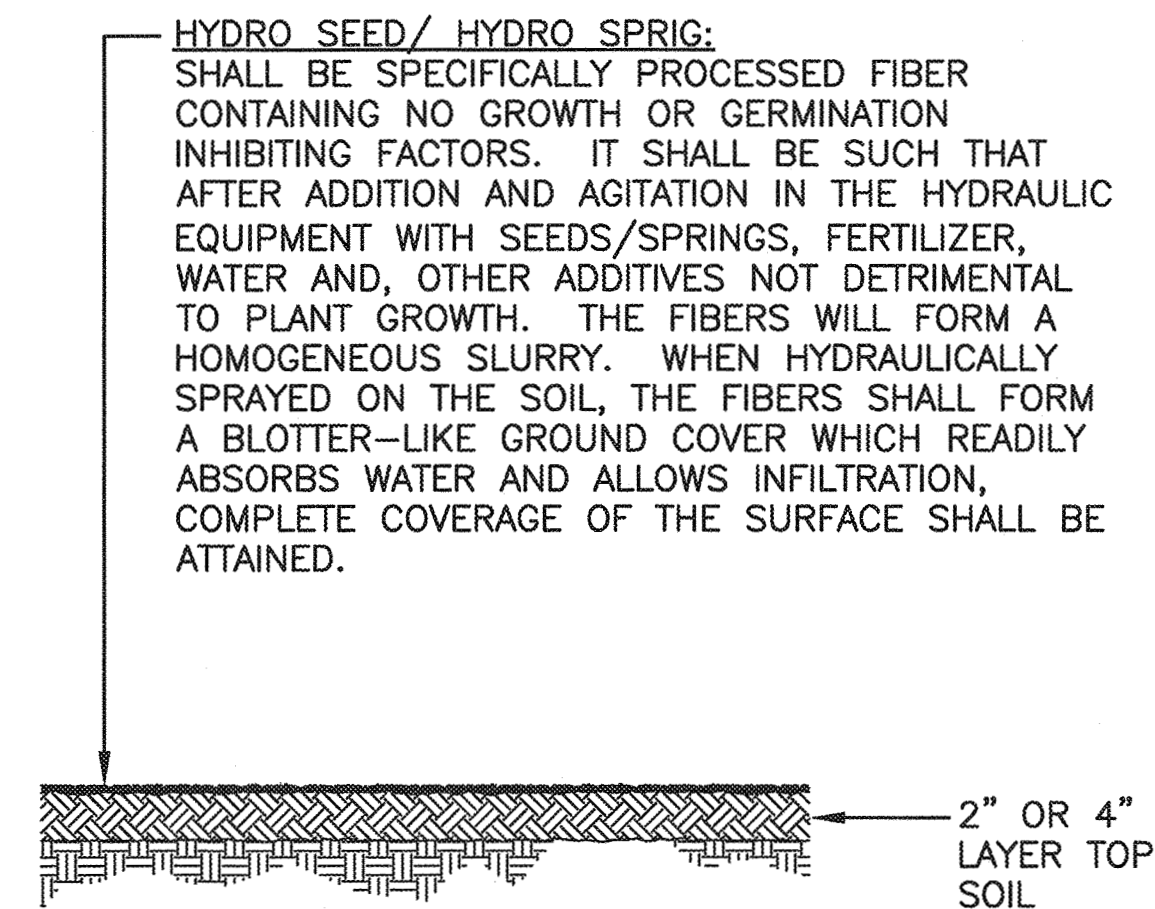


5 PLASTIC HEADER DETAIL  
NOT TO SCALE M2921.01-08

NOTE:  
IMMEDIATELY AFTER PLANTING, WATER HEAVILY  
TO ENSURE SOIL SETTLES AROUND ROOTS.



2 GROUND COVER PLANTING  
NOT TO SCALE M2921.01-03



4 HYDRO-SEED/SPRIG DETAIL  
NOT TO SCALE M2921.01-07

P:\PROJECTS\MAUI\Central Maui Regional Park\CADD\phase 3\CADD\DETAILS\U-01.dwg L-5

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION <b>CENTRAL MAUI REGIONAL SPORTS COMPLEX</b> <b>PHASE 3</b> WAILUKU, MAUI, HAWAII PLANTING DETAILS - 2					
		THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. SIGNATURE: <i>Russell Y.J. Chung</i> EXP. DATE: 12/31/16			
		APPROVED: <i>[Signature]</i> CHIEF ENGINEER			
DESIGNED: GR/NN/JP		SUBMITTED: -- <i>[Signature]</i>			
DRAWN: GR/NN/JP		DATE: DECEMBER 2015			
CHECKED: GTR		SCALE: AS SHOWN			
APPROVED: <i>[Signature]</i>		DATE: DEC 22 2015		DRAWING NO. L-5	

Connect to existing lateral installed in phase 2

Valves installed in phase 2 connect to the valves and install new work as needed. see phase 2 plans for exact location of valves

Valves installed in phase 2 connect to the valves and install new work as needed. see phase 2 plans for exact location of valves

Contractor to verify the extent of phase 2 installation and adjust layout to use those sprinklers and lateral piping if previously installed - typical

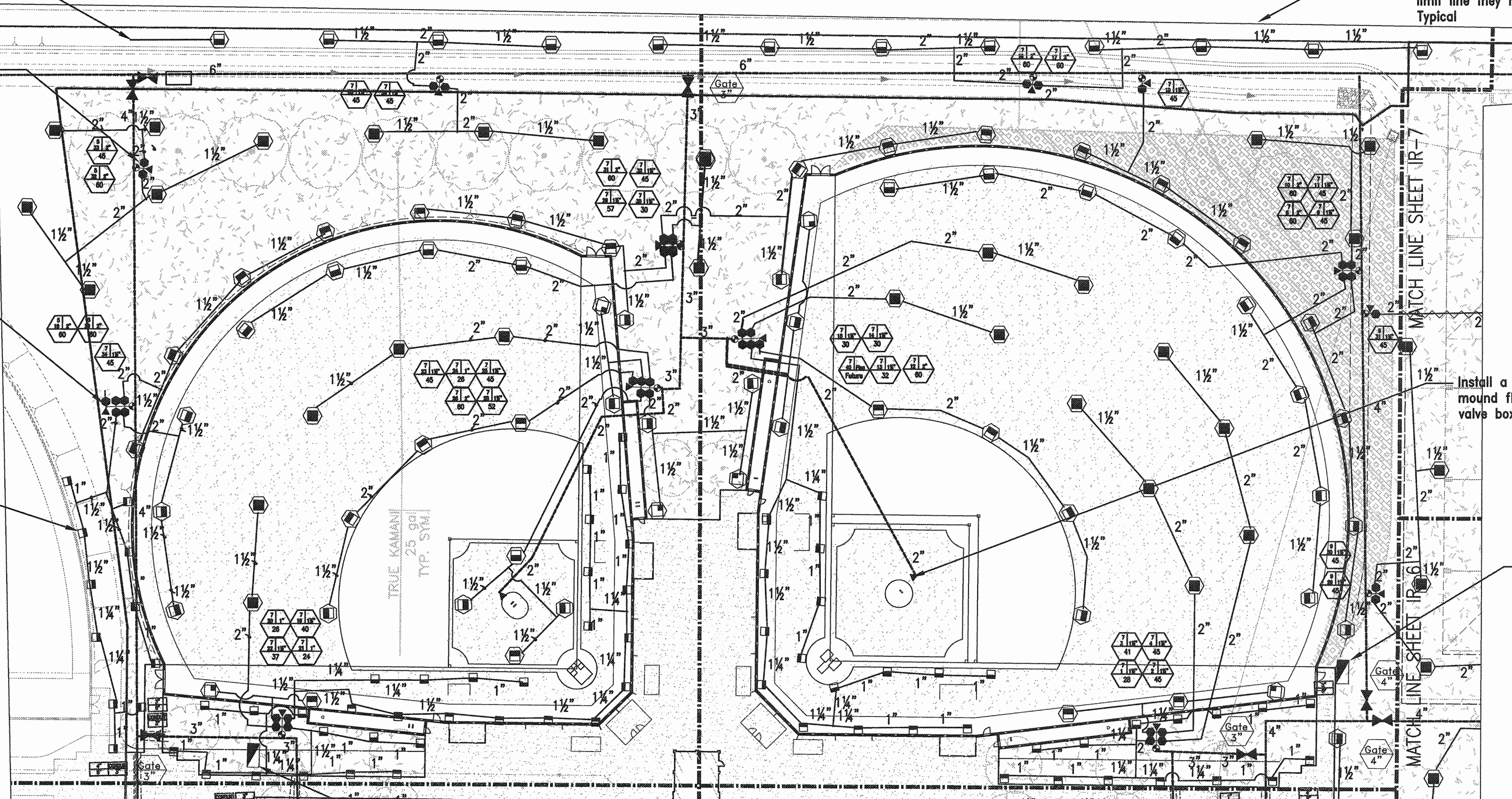
LIMIT OF WORK SEE PHASE 2 PLANS

Approximate limit of work install all sprinklers as shown regardless of which side of the limit line they may be shown. Typical

Install a Q.C. valve behind pitchers mound flush to grade without a valve box - Typical

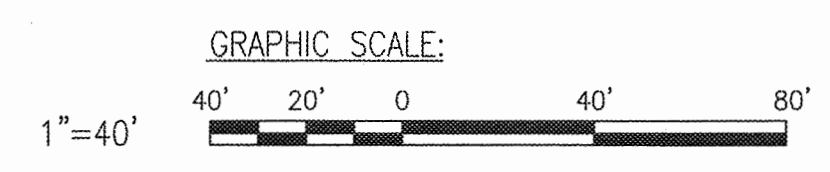
Controller 9 Contractor to install a 40 Station pedestal mounted field controller at approximate location shown. See electrical plans for 120v power to controller.

Controller 7 Contractor to install a 40 Station pedestal mounted field controller at approximate location shown. See electrical plans for 120v power to controller.



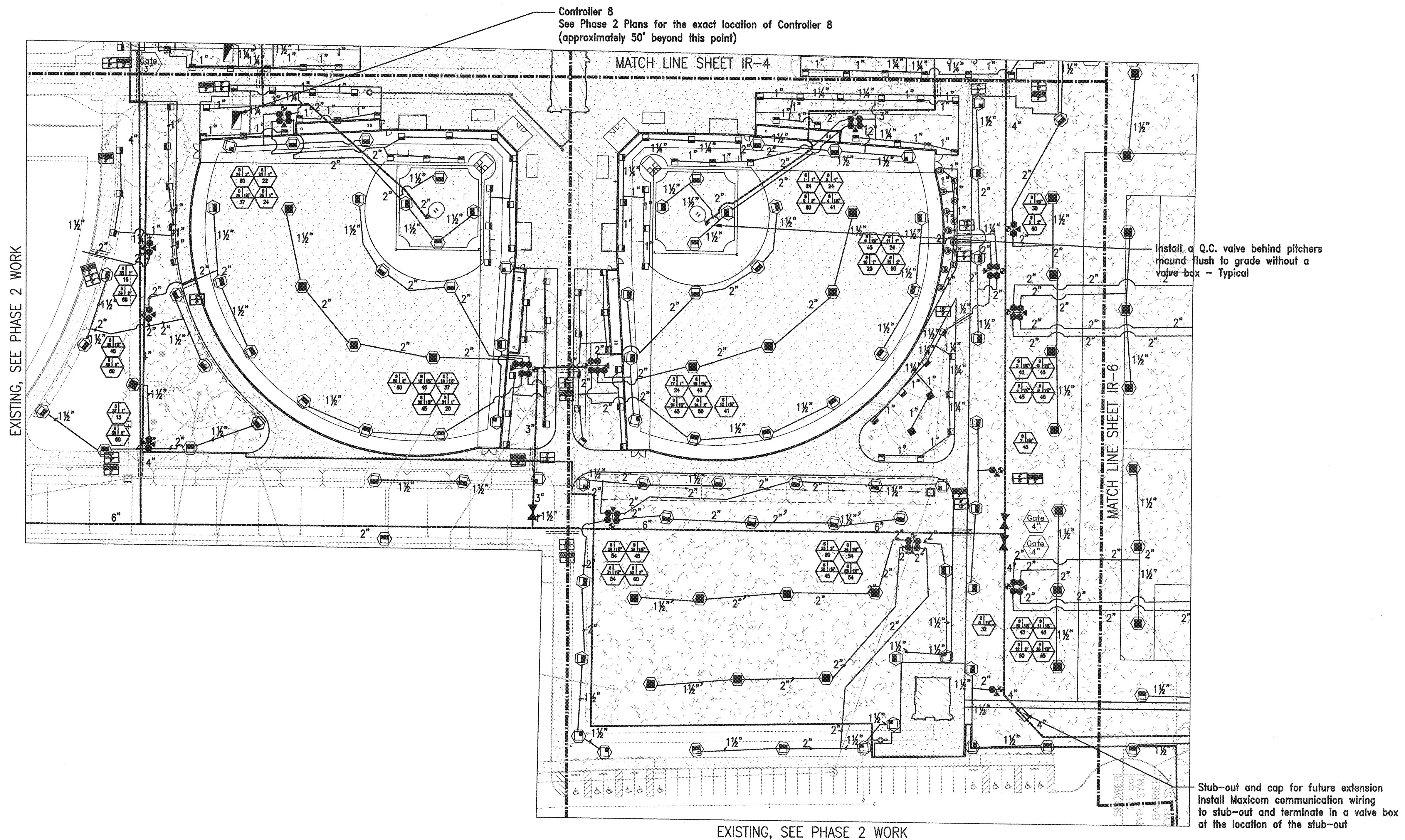
MATCH LINE SHEET IR-5

1 IRRIGATION PLAN 4  
SCALE: 1" = 40'

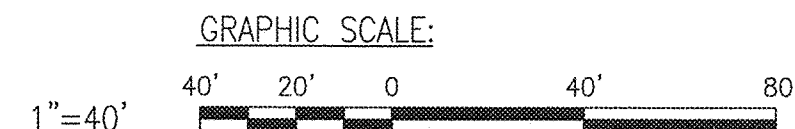


REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION CENTRAL MAUI REGIONAL SPORTS COMPLEX PHASE 3 WAILUKU, MAUI, HAWAII <b>IRRIGATION PLAN 4</b>					
DESIGNED: AGS		SUBMITTED: --			
DRAWN: AGS/PPS		DATE: DECEMBER 2015			
CHECKED: AGS		SCALE: 1" = 40'			
APPROVED: <i>[Signature]</i>		R. M. TOWILL CORPORATION Chief Engineer		DRAWING NO. IR-4	
		DEC 22 2015		DATE	

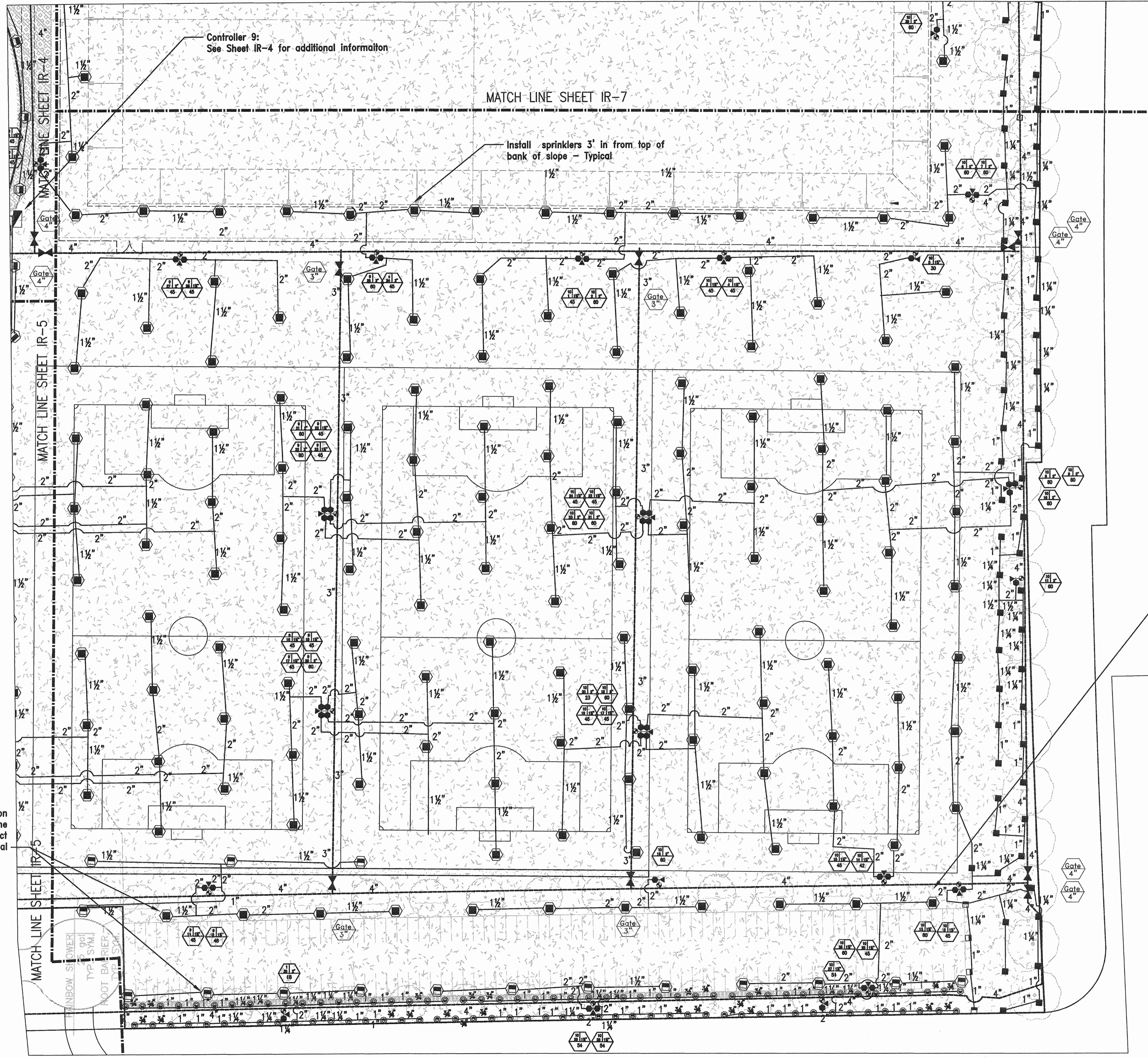




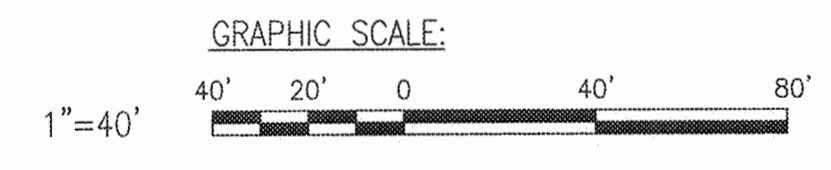
1 IRRIGATION PLAN 5  
SCALE: 1" = 40'



REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION CENTRAL MAUI REGIONAL SPORTS COMPLEX PHASE 3 WAILUKU, MAUI, HAWAII <b>IRRIGATION PLAN 5</b>					
DESIGNED: AGS			SUBMITTED: --		
DRAWN: AGS/PPS			DATE: DECEMBER 2015		
CHECKED: AGS			SCALE: 1" = 40'		
APPROVED: <i>[Signature]</i> R. M. TOWILL CORPORATION CHIEF ENGINEER			DRAWING NO. IR-5 DATE: DEC 2 2 2015		



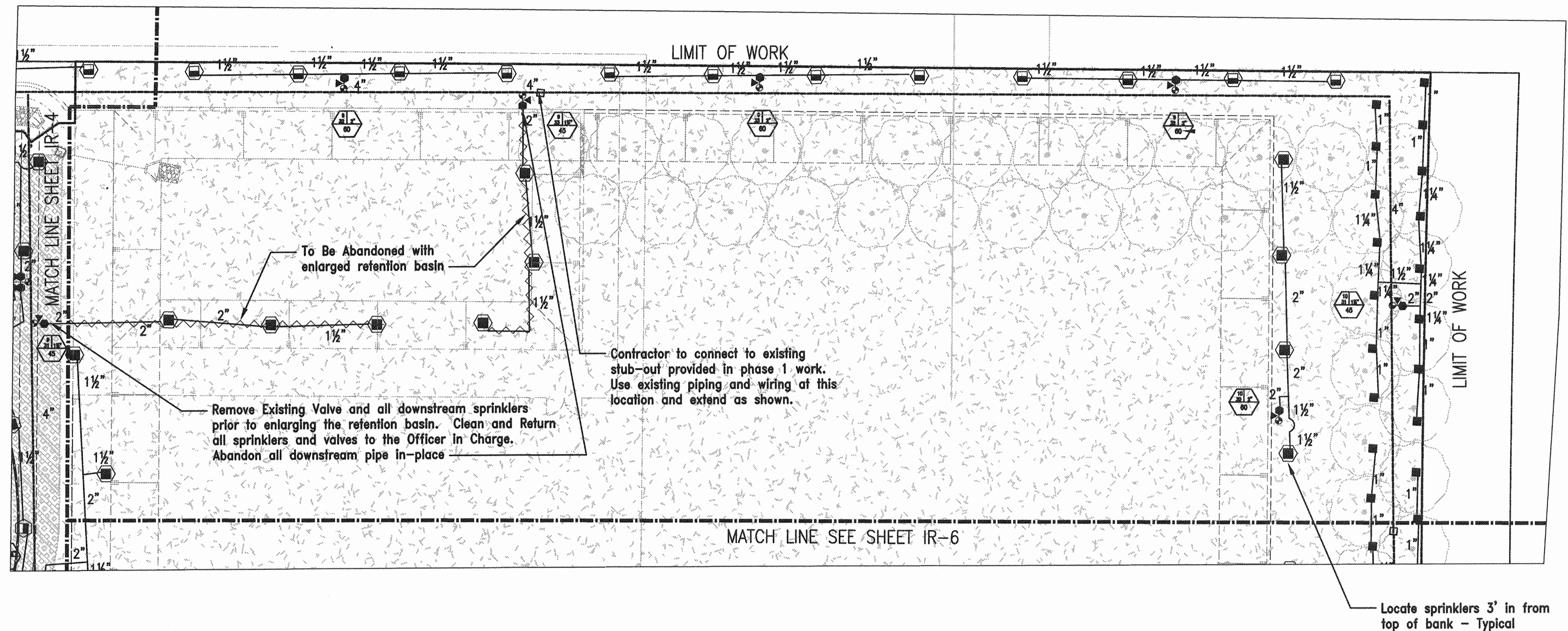
Controller 10:  
Contractor to install a 40 Station pedestal mounted field controller at approximate location shown. See electrical plans for 120v power to controller.



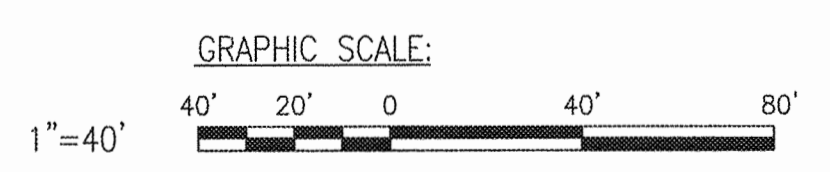
1 IRRIGATION PLAN 6  
SCALE: 1" = 40'



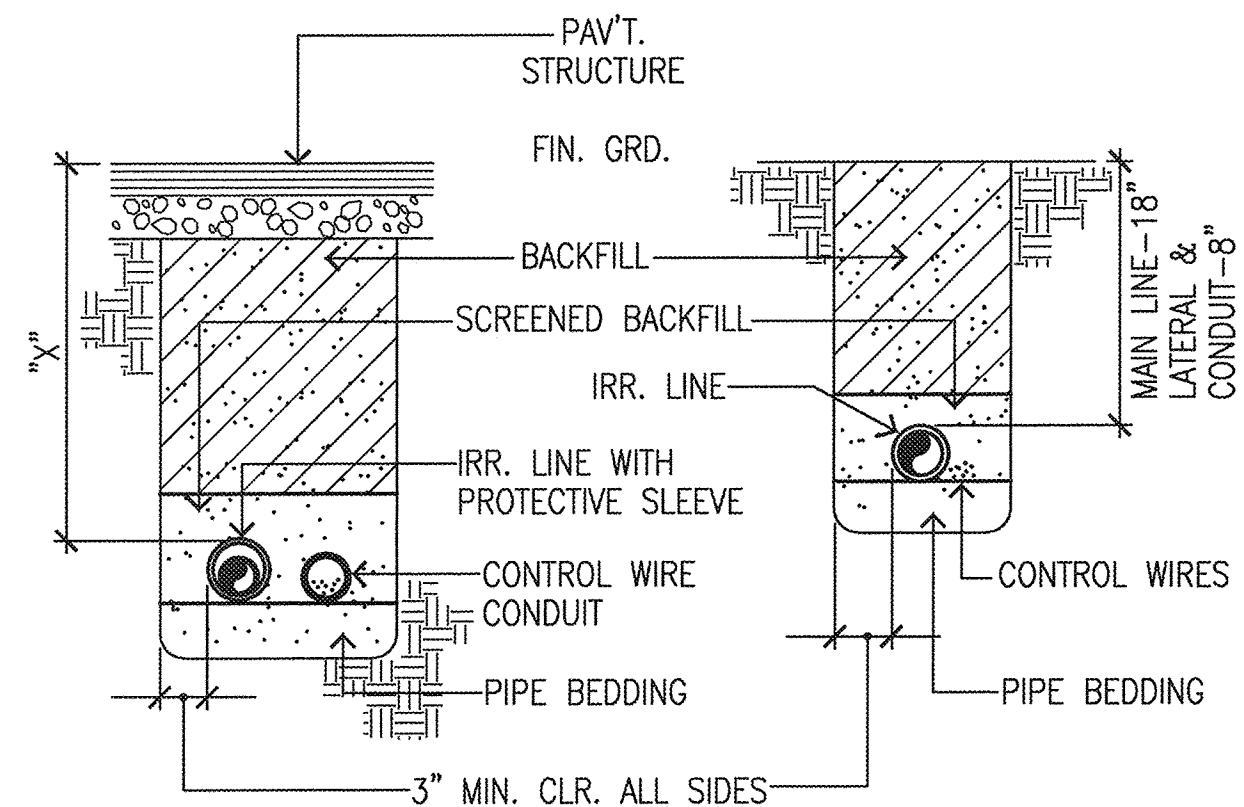
REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION CENTRAL MAUI REGIONAL SPORTS COMPLEX PHASE 3 WAILUKU, MAUI, HAWAII IRRIGATION PLAN 6					
DESIGNED: AGS		SUBMITTED: ---		DATE: DECEMBER 2015	
DRAWN: AGS/PPS		CHECKED: AGS		SCALE: 1" = 40'	
APPROVED: <i>[Signature]</i>		R. M. TOWILL CORPORATION CHIEF ENGINEER		DRAWING NO. IR-6	
		DEC 22 2015		DATE	



1 IRRIGATION PLAN 7  
SCALE: 1" = 40'

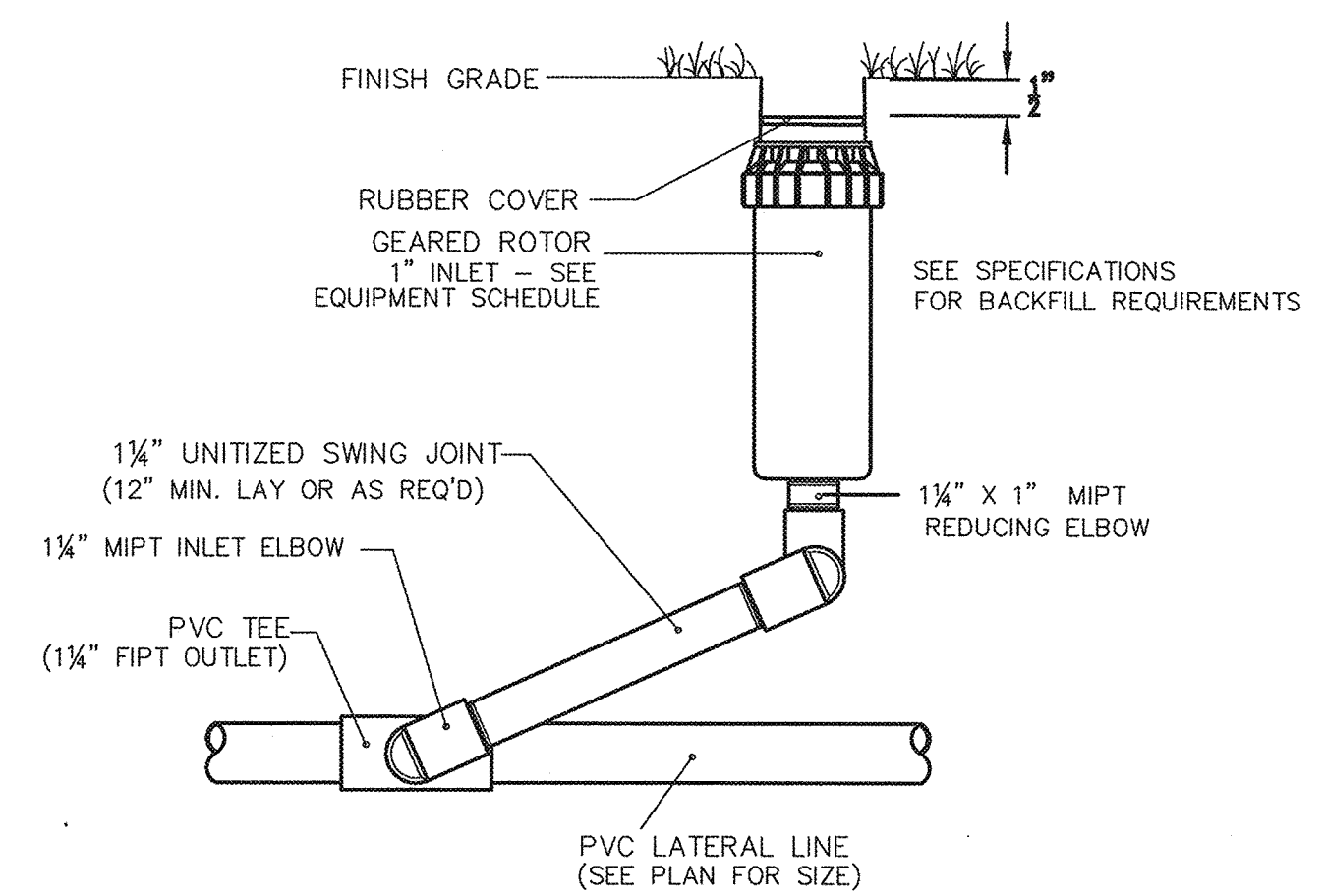


REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION CENTRAL MAUI REGIONAL SPORTS COMPLEX PHASE 3 WAILUKU, MAUI, HAWAII <b>IRRIGATION PLAN 7</b>					
		DESIGNED: AGS	SUBMITTED: --		
Signature: <i>Allan G. Schildtschacht</i> 4/30/16 EXP. DATE:		DRAWN: AGS/PPS	DATE: DECEMBER 2015		
		CHECKED: AGS	SCALE: 1" = 40'		
R. M. TOWILL CORPORATION <small>1000 W. Iliouliou Dr., Honolulu, HI 96819-1000 Phone: 808-942-1133 Fax: 808-942-1134</small>		APPROVED: <i>[Signature]</i> CHIEF ENGINEER	DEC 22 2015 DATE		DRAWING NO. IR-7

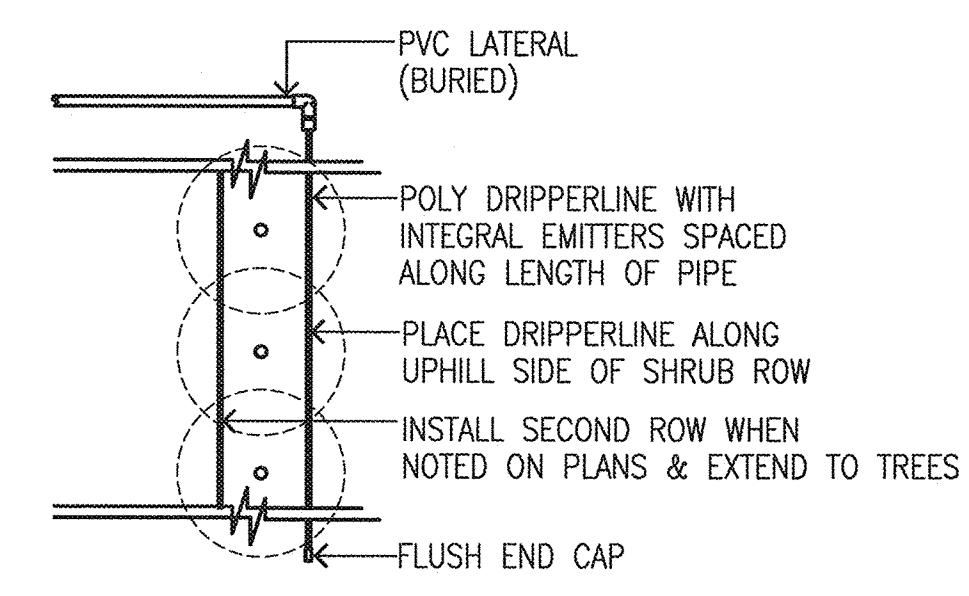


UNDER PAV'T. IN LANDSCAPED AREA  
 NOTE: "X" DEPTH SHALL BE 24" MIN. UNDER VEHICULAR PAV'T. OR 12" MIN. UNDER WALKWAYS.

1 TRENCHING  
 IR-8 NOT TO SCALE

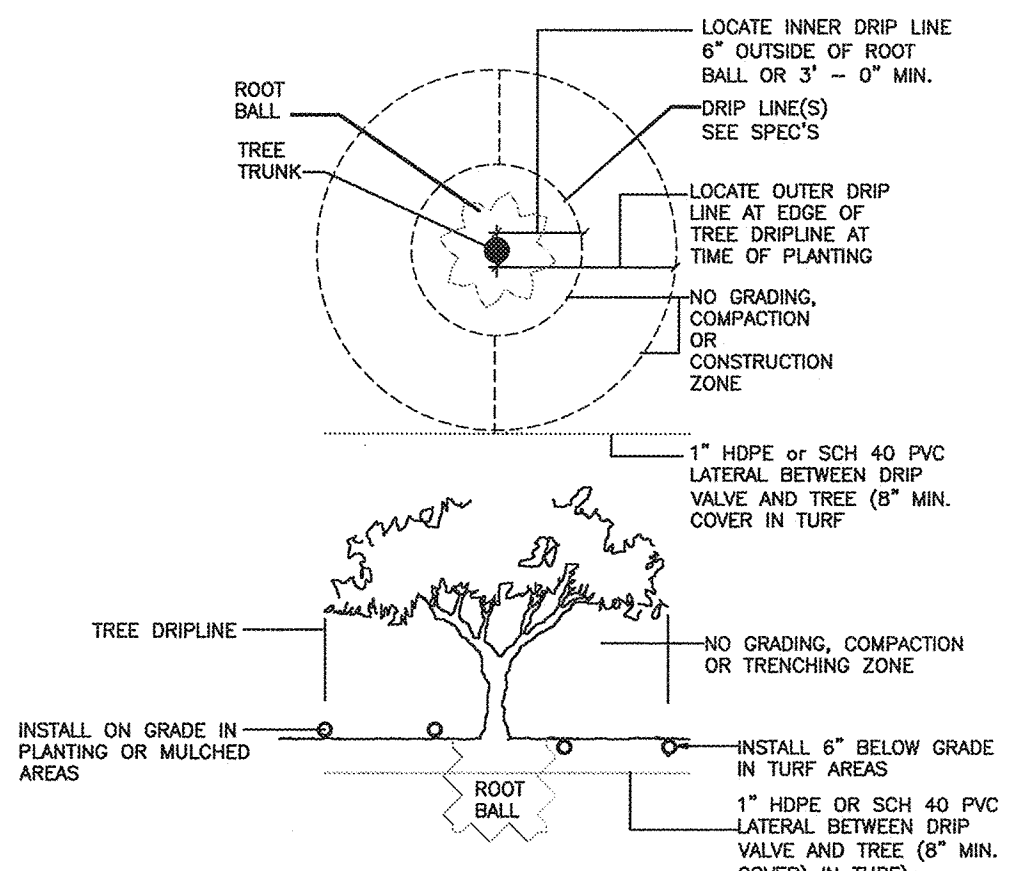


4 ATHLETIC FIELD SPRINKLER DETAIL  
 IR-8 NOT TO SCALE

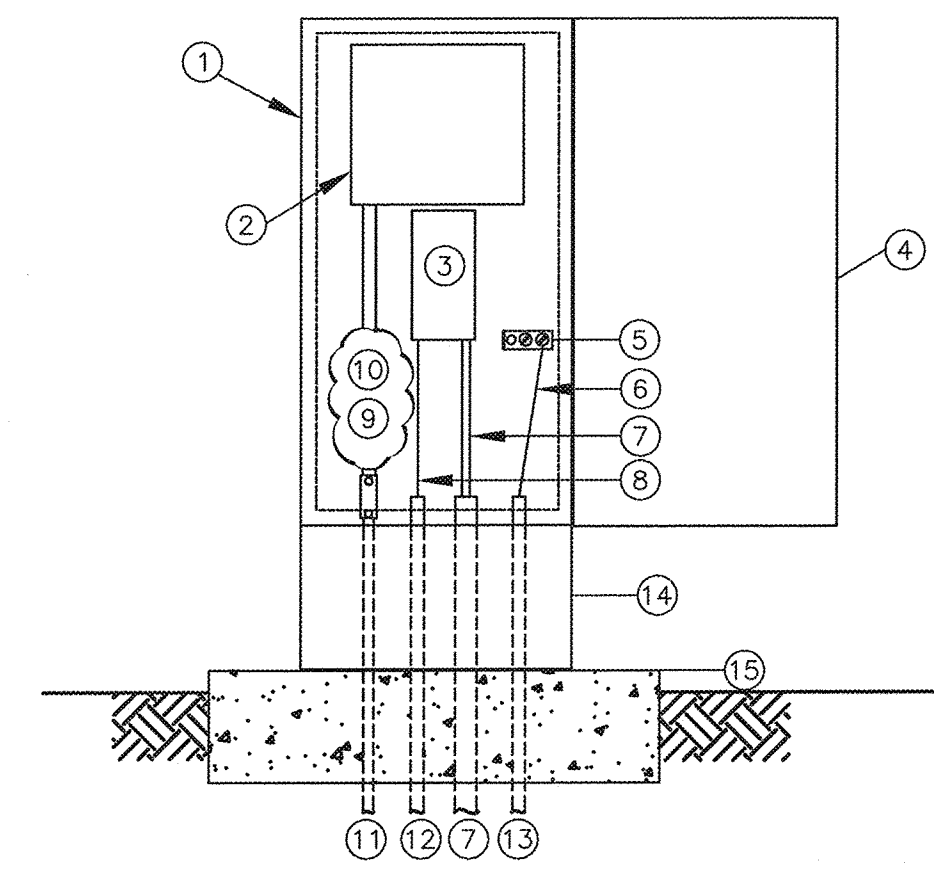


NOTE: MONITOR AND MODIFY AS REQ'D., DRIPPERLINE PLACEMENT TO INSURE THAT ANY SALT ACCUMULATION IS PUSHED OUTSIDE OF DRIP LINE AND EXTENT OF SHRUB ROOTS.

7 DRIPPERLINE EMITTER  
 IR-8 NOT TO SCALE



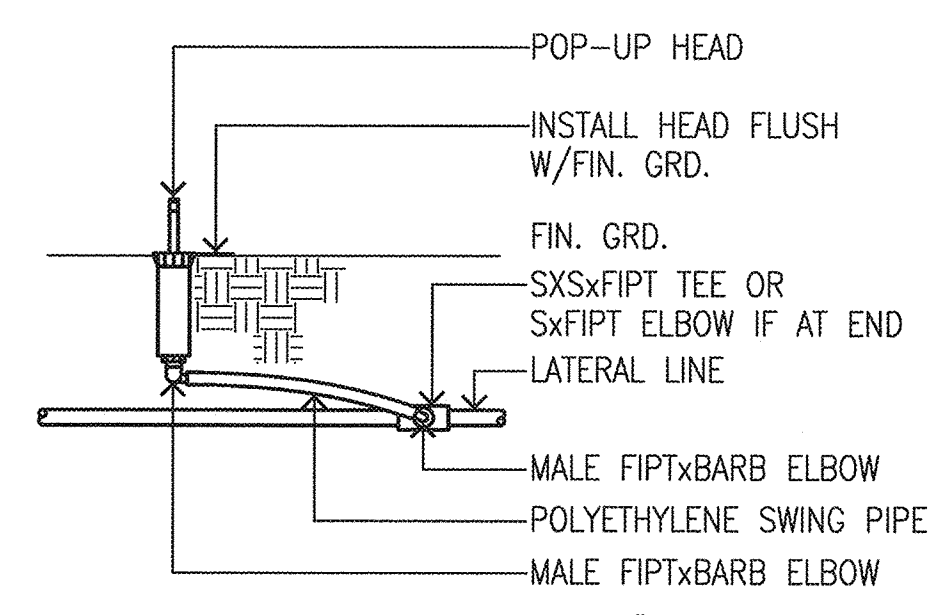
10 TREE DRIP IRRIGATION DETAIL  
 IR-8 NOT TO SCALE



- ① STAINLESS STEEL VIT SB-24DSS ENCLOSURE
- ② RAIN BIRD ESP-40SAT-2W FIELD CONTROLLER
- ③ TERMINAL STRIP
- ④ ENCLOSURE DOOR
- ⑤ GROUNDING BUSS BAR
- ⑥ #10 COPPER GROUND WIRE FROM GROUNDING BUSS BAR TO GROUNDING GRID (SEE GROUNDING GRID DETAIL 1 SHEET IR-7)
- ⑦ COMMON AND CONTROL WIRES FOR VALVES
- ⑧ TWO-WIRE PATH
- ⑨ REFER TO LOCAL ELECTRIC CODE FOR CONNECTIONS
- ⑩ RAIN BIRD WARRANTY REQUIRES PROPER SURGE PROTECTION. USE INTERMATIC AG2401 OR TRIPPLITE ISOBAR
- ⑪ 120 VAC ELECTRICAL SERVICE
- ⑫ PE-CABLE TO OTHER SATELLITES
- ⑬ GROUND WIRE TO GROUNDING ROD GRID (SEE GROUNDING PLATE DETAIL)
- ⑭ STAINLESS STEEL VIT PED-24DSS CONTROLLER PEDESTAL TO MATCH DEEP ENCLOSURE
- ⑮ CONCRETE SLAB

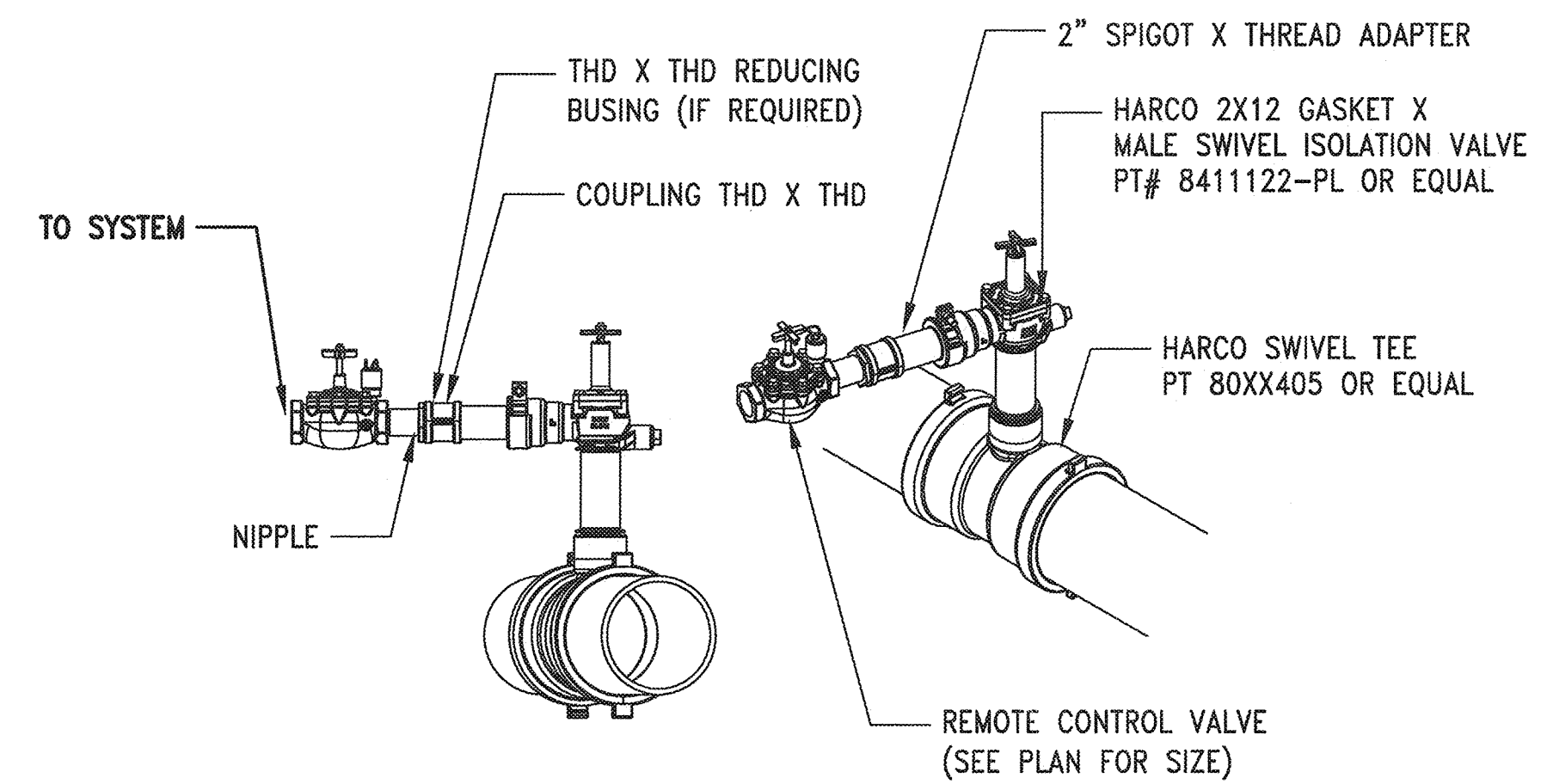
NOTE: INSTALL A PAIGE 250090LED ARRESTOR ON THE 120V SUPPLY TO EACH CONTROLLER WITHIN ENCLOSURE - INSPECT MONTHLY

2 FIELD SATELLITE CONTROLLER  
 IR-8 NOT TO SCALE



NOTE: HEAD SHALL BE INSTALLED 12" CLR. FROM BLDG. FACE AND 6" CLR. FROM EDGE OF WALK.

8 4" POP-UP HEAD  
 IR-8 NOT TO SCALE



11 MAIN LINE TAP DETAIL  
 IR-8 NOT TO SCALE

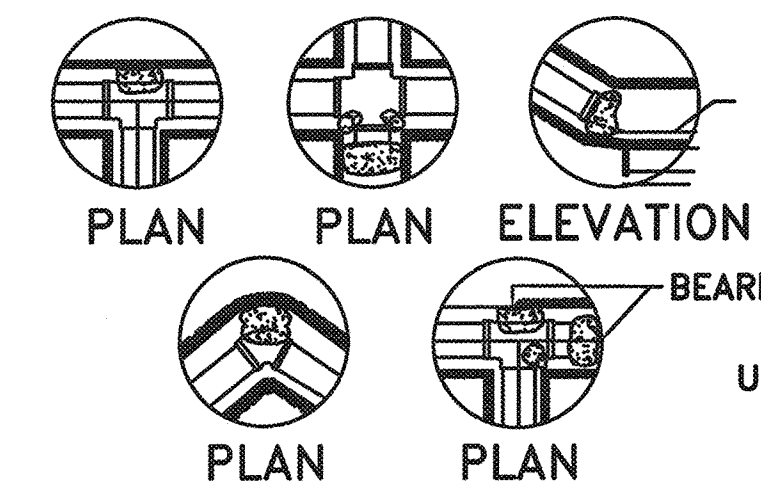
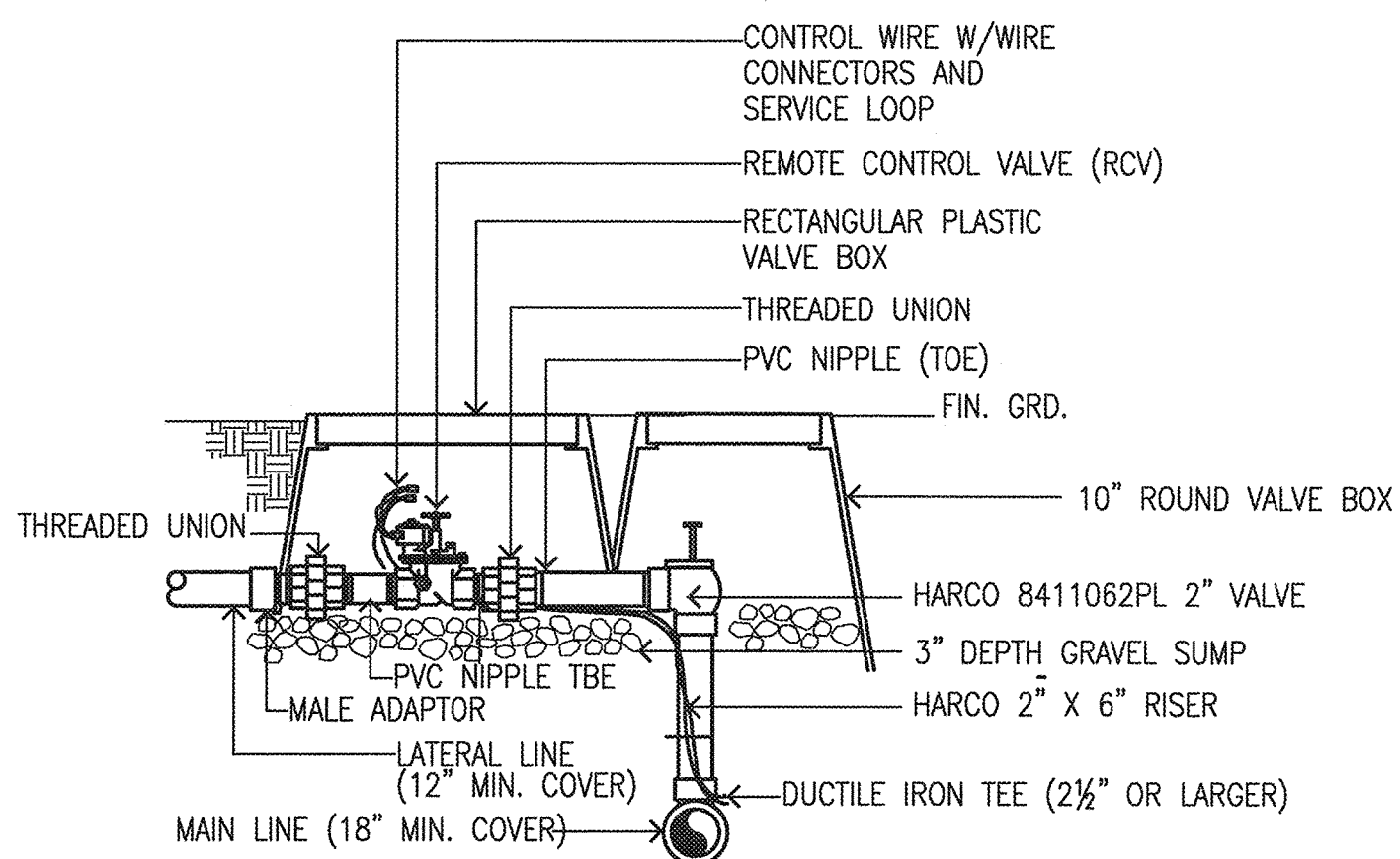


TABLE OF AREAS IN SQ. FT. AT THRUST BLOCK IN VERTICAL CONTACT WITH SOIL OF VARYING BEARING VALUES. WATER PRESSURE = 225 P.S.I.

IPS SIZE	TEES, BENDS, ENDS				90 DEG. BEND				45 DEG. BEND				22-1/2 DEG. BEND				METRIC SIZE
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	
<6"	6.0	4.5	2.0	1.5	8.0	6.0	2.5	2.0	4.5	3.5	1.5	1.5	2.5	2.0	1.0	1.0	<150MM
6"	10.0	7.5	3.0	2.5	14.0	10.5	4.5	3.5	7.5	6.0	2.5	2.0	4.0	3.0	1.5	1.0	200MM
10"	15.0	11.0	4.5	4.0	21.0	15.5	6.5	5.5	11.5	8.5	3.5	3.0	6.0	4.5	2.0	1.0	250MM
12">	21.0	15.5	6.5	5.5	29.5	22.0	9.0	7.5	16.0	12.0	5.0	4.0	8.5	6.5	2.5	2.5	300MM

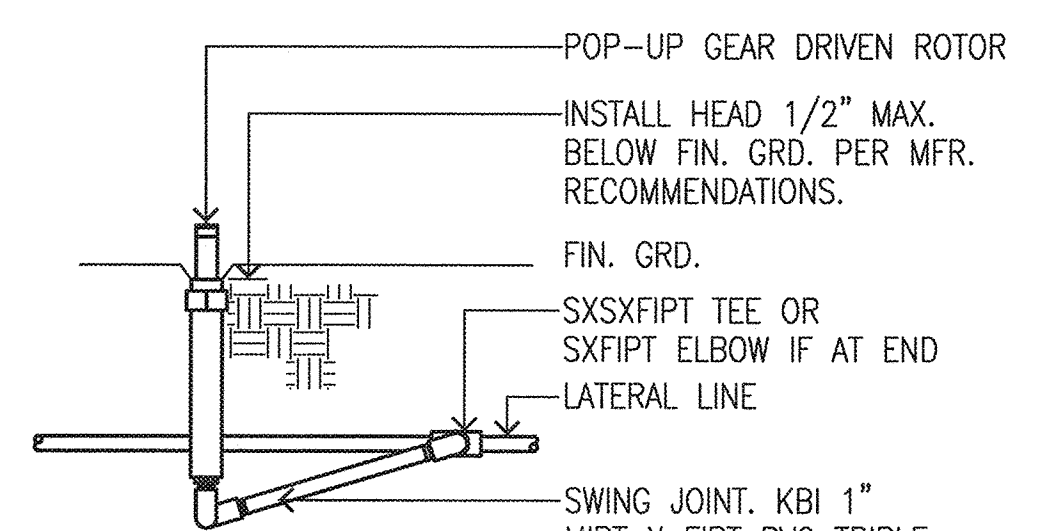
CONDITION OF SOIL  
 A - SAND 1,500 LBS/SQ. FT.  
 B - SAND & GRAVEL 2,000 LBS/SQ. FT.  
 C - SAND, GRAVEL, & CEMENTED CLAY 3,000 LBS/SQ. FT.  
 D - SHALE 6,000 LBS/SQ. FT.

3 THRUST BLOCK DETAIL  
 IR-8 NOT TO SCALE



- NOTE 1. TOP OF VALVE BOX SHALL BE FLUSH WITH FIN. GRD. IN GRASS, 2" ABOVE GRADE IN GROUND COVER.
- NOTE 2. PROVIDE REDUCER BUSHINGS AS REQ'D.
- NOTE 3. SEE SPEC'S FOR MINIMUM DEPTH OF COVER OVER PIPING
- NOTE 4. UNION BETWEEN MAV & RCV CAN BE AN INTERGRAL PART OF MAV

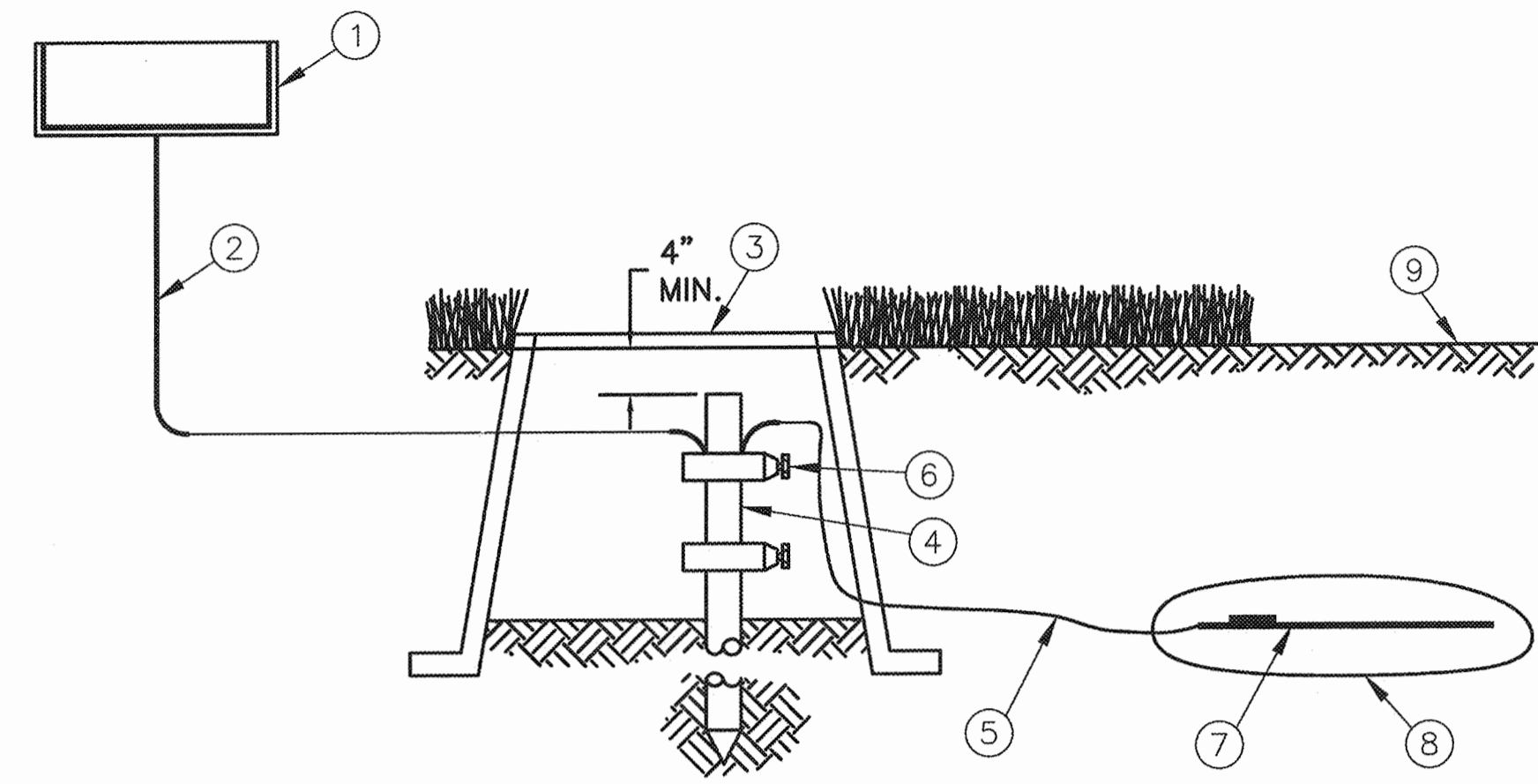
6 REMOTE CONTROL VALVE-A/C  
 IR-8 NOT TO SCALE



NOTE: HEAD SHALL BE INSTALLED 18" CLR. FROM EDGE OF WALK OR PAVEMENT.

9 POP-UP GEAR DRIVEN ROTOR  
 IR-8 NOT TO SCALE

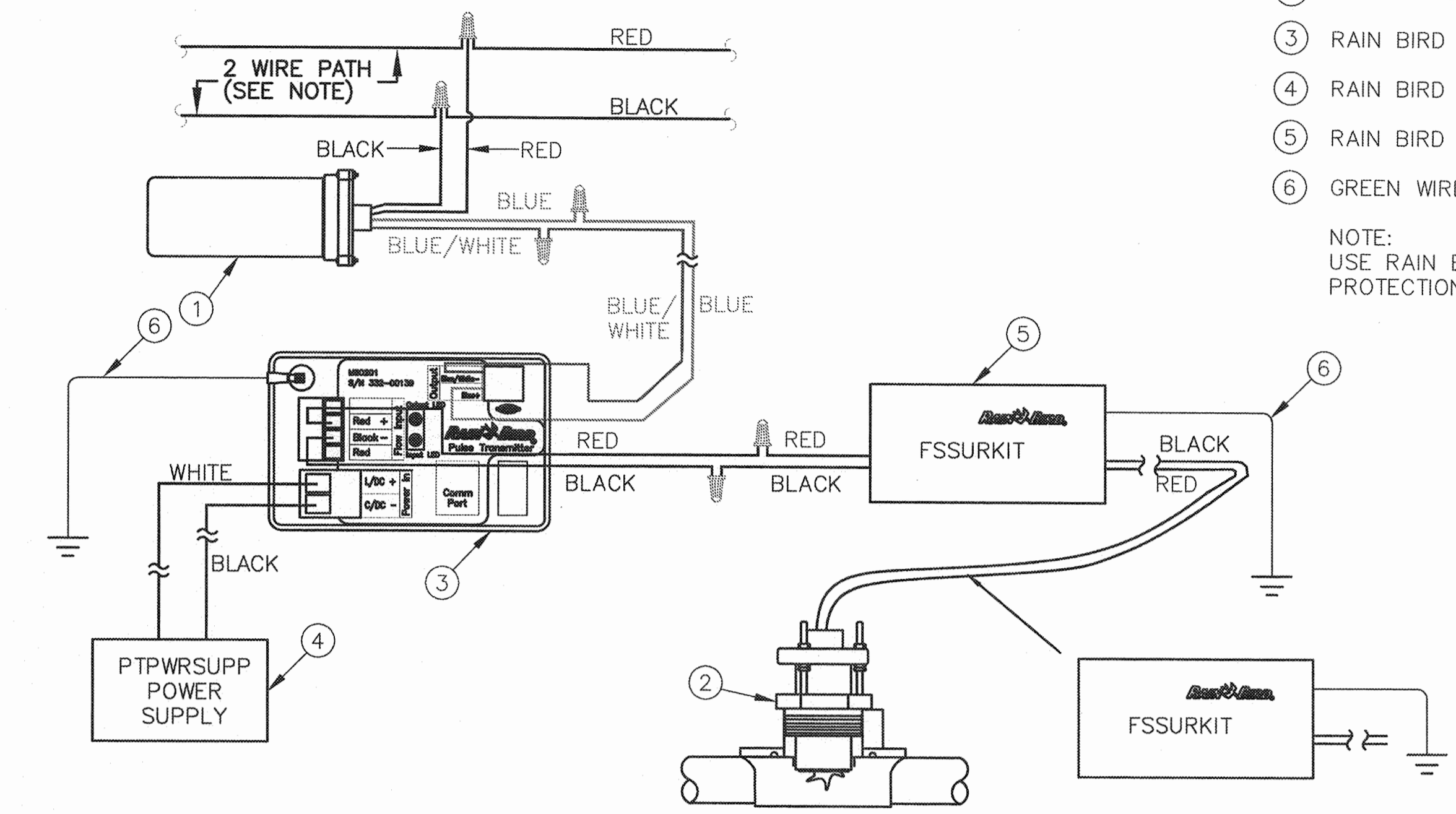
REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION CENTRAL MAUI REGIONAL SPORTS COMPLEX PHASE 3 WAILUKU, MAUI, HAWAII <b>IRRIGATION DETAILS</b>					
DESIGNED:	AGS	SUBMITTED:	---		
DRAWN:	AGS/PPS	DATE:	DECEMBER 2015		
CHECKED:	AGS	SCALE:	AS NOTED		
APPROVED:			DATE:	DEC 2 2 2015	
R. M. TOWILL CORPORATION <small>Quality • Integrity • Innovation • Service • Client Satisfaction</small> 805 642-1133 1134 North Niihau Street, Suite 202, Wailuku, Hawaii 96793-0244		CHIEF ENGINEER		DRAWING NO. IR-8	



1 SATELLITE GROUNDING DETAIL  
IR-9 NOT TO SCALE

- ① MAXICOM FIELD SATELLITE, WEATHER STATION OR CCU ASSEMBLY
- ② SOLID BARE COPPER WIRE (#10 AWG) FROM GROUNDING ROD/PLATE TO SATELLITE, CCU OR WEATHER STATION. MAKE WIRE AS SHORT AS POSSIBLE
- ③ 10" VALVE BOX WITH BLACK ELECTRICAL VALVE BOX COVER
- ④ 4" MIN. BURYING DEPTH
- ⑤ BARE COPPER WIRE (#6 AWG MIN.) BETWEEN GROUNDING ROD AND GROUNDING PLATE WITH MIN. 10-OHM RESISTANCE AT EACH ROD.
- ⑥ COPPER GROUND ROD CLAMP OR WELDS
- ⑦ COPPER GROUNDING PLATE
- ⑧ GROUNDING ENHANCEMENT MATERIALS (IS EXPECTED TO BE REQUIRED DUE TO SOIL TYPES FOUND ON SITE). ADD AS NEEDED TO MEET THE 10-OHM RESISTANCE NOTED.
- ⑨ FINISHED GRADE

NOTE: REFER TO RAIN BIRD CENTRAL CONTROL TECHNICAL BULLETIN TB-9001MULTI FOR INSTALLATION GUIDELINES. GROUNDING DETAIL APPLIES TO ALL FIELD SATELLITES, THE CLUSTER CONTROL UNIT (CCU) AND THE WEATHER STATION. ALL UNITS SHALL HAVE A PAIGE #250090LED, MGP-1 AND MSP-1 INSTALLED AS PER RAIN BIRD SPECIFICATION. INSTALLATION MUST BE CERTIFIED BY THE RAIN BIRD SERVICE PROVIDER PRIOR TO ACCEPTANCE OF SYSTEM.

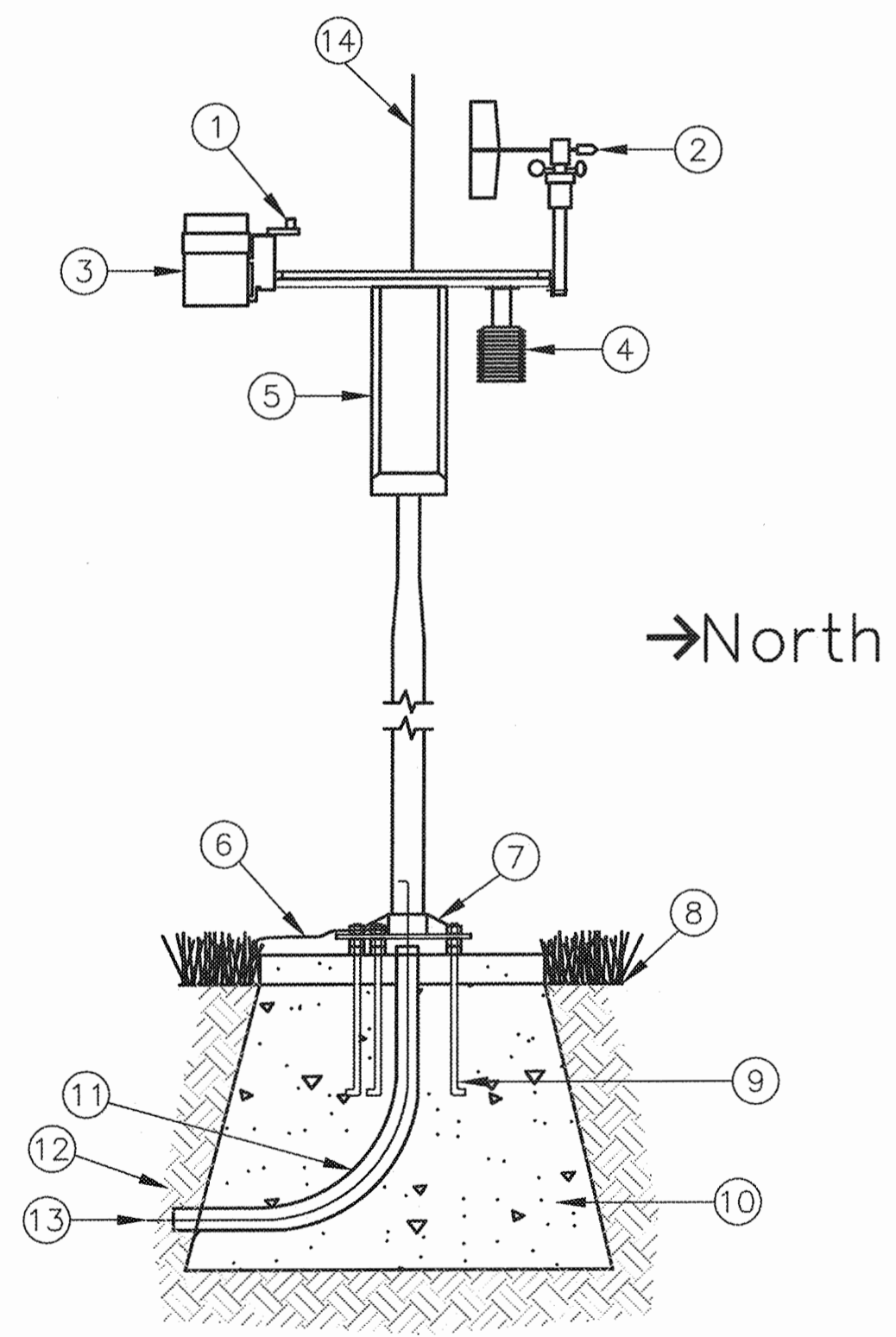


3 PUMP FLOW SENSOR DETAIL  
IR-9 NOT TO SCALE

- ① RAIN BIRD PULSE DECODER SET FOR A CHANNEL (1 THRU 28) DEC-PUL
- ② FLOW SENSOR SUPPLIED BY PUMP MFG.
- ③ RAIN BIRD MODEL PT322 TRANSMITTER
- ④ RAIN BIRD PTPWRSUPP POWER SUPPLY
- ⑤ RAIN BIRD FSSURKIT SURGE PROTECTOR
- ⑥ GREEN WIRE TO GROUND

NOTE: USE RAIN BIRD MSP-1 FOR PROPER SURGE PROTECTION.

NOTE: IF THE FLOW SENSOR IS LOCATED MORE THAN 150 FEET FROM THE FLOW TRANSMITTED, INCLUDE AN ADDITIONAL FSSURKIT AND GROUND ROD AT THE FLOW SENSOR LOCATION.



2 ON-SITE WEATHER STATION DETAIL  
IR-9 NOT TO SCALE

- ① SOLAR RADIATION SENSOR
- ② ANEMOMETER AND WIND VANE
- ③ TIPPING BUCKET RAIN GAUGE
- ④ RADIATION SHIELD WITH TEMPERATURE AND RELATIVE HUMIDITY PROBE
- ⑤ ENVIRONMENTAL ENCLOSURE
- ⑥ GROUND WIRE TO GROUNDING GRID. REFER TO MAXICOM DETAIL 1 SHEET IR-7
- ⑦ MOUNTING COLLAR
- ⑧ FINISH GRADE
- ⑨ 1/2-INCH X 12-INCH ANCHOR BOLT (USE MANUFACTURER'S TEMPLATE FOR PROPER LOCATION)
- ⑩ FOOTING: 24" X 24" TO 32" X 32" X 24" DEEP
- ⑪ TWO (2) LONG SWEEP ELBOWS (ONE HIDDEN WITH COMMUNICATION WIRE). ORIENT PROPERLY FOR WIRING (SIZE AS REQUIRED)
- ⑫ TELEPHONE LINE OR DIRECT CONNECT SHORT HAUL MODEM CABLE ROUTED THROUGH HIDDEN LONG SWEEP ELBOW (PER MANUFACTURER'S SPECIFICATION) BACK TO CCU LOCATION.
- ⑬ 16VAC POWER SUPPLY
- ⑭ GROUND PER DETAIL 1, SHEET IR-7 TO ENSURE 10-OHMS RESISTANCE OR LESS.

FLOW THROUGH LATERAL	SIZE OF LATERAL
0.0 THROUGH 6 GPM	3/4" PIPE
7 GPM THROUGH 12 GPM	1" PIPE
13 GPM THROUGH 22 GPM	1 1/4" PIPE
23 GPM THROUGH 35 GPM	1 1/2" PIPE
36 GPM THROUGH 50 GPM	2" PIPE
51 GPM THROUGH 75 GPM	2 1/2" PIPE

PEAK FLOW SHALL NOT EXCEED 75 GPM.  
ALL SMALL ROTOR CIRCUITS SHALL BE 1" MINIMUM  
ALL ATHLETIC FIELD ROTOR CIRCUITS SHALL BE 1-1/2" MINIMUM

4 LATERAL PIPE SIZING CHART  
IR-9 TO BE USED FOR LATERAL PIPING NOT OTHERWISE SIZED ONLY

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
ENGINEERING DIVISION

CENTRAL MAUI REGIONAL SPORTS COMPLEX  
PHASE 3  
WAILUKU, MAUI, HAWAII

**WEATHER STATION/GROUNDING DETAILS**

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature: *Allan G. Schildhnecht* 4/20/16  
EXP. DATE

DESIGNED: AGS  
DRAWN: AGS/PPS  
CHECKED: AGS  
APPROVED: *[Signature]*  
CHIEF ENGINEER

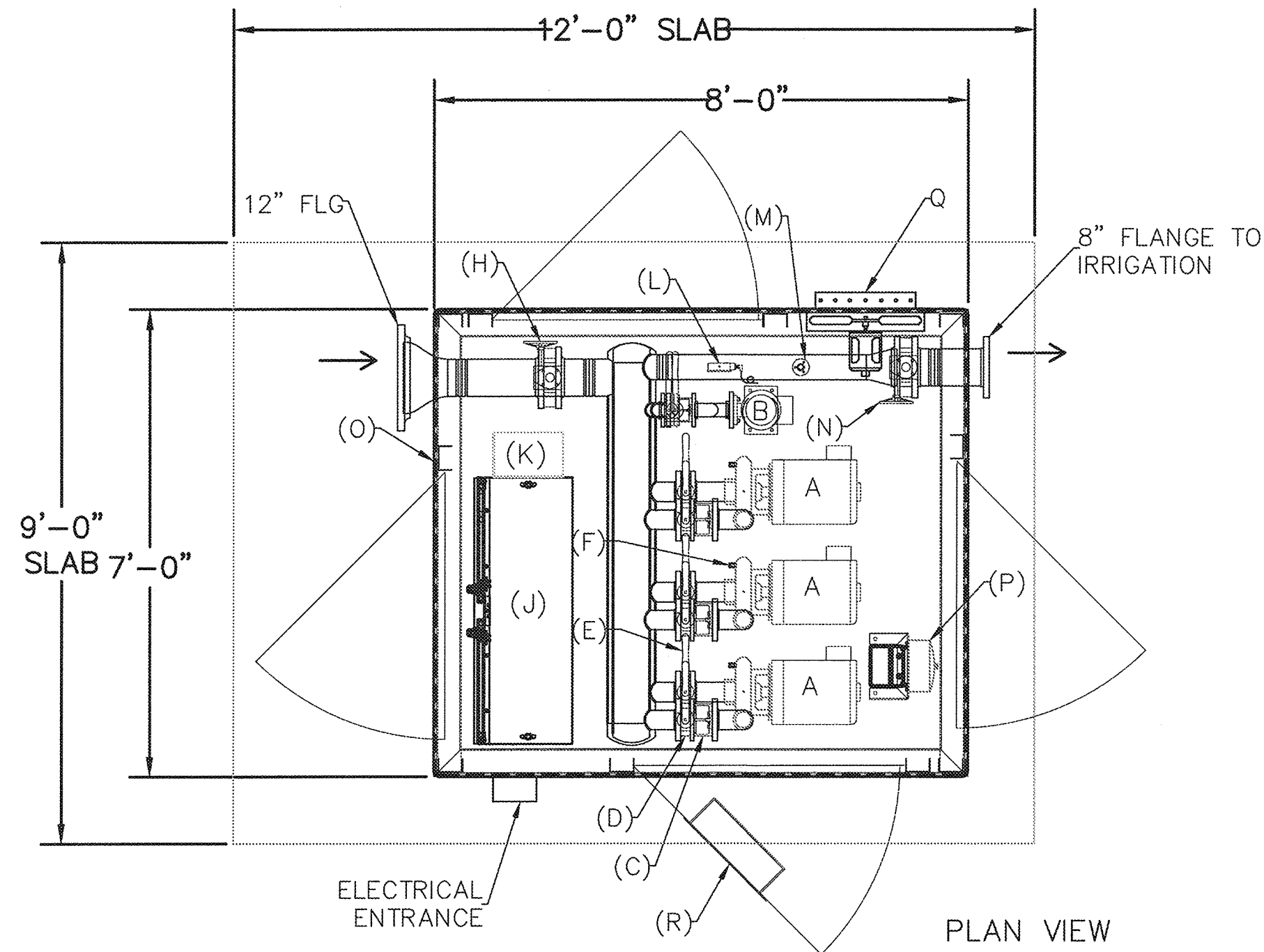
DATE: DECEMBER 2015  
SCALE: AS NOTED

DATE: DEC 22 2015  
DRAWING NO. IR-9

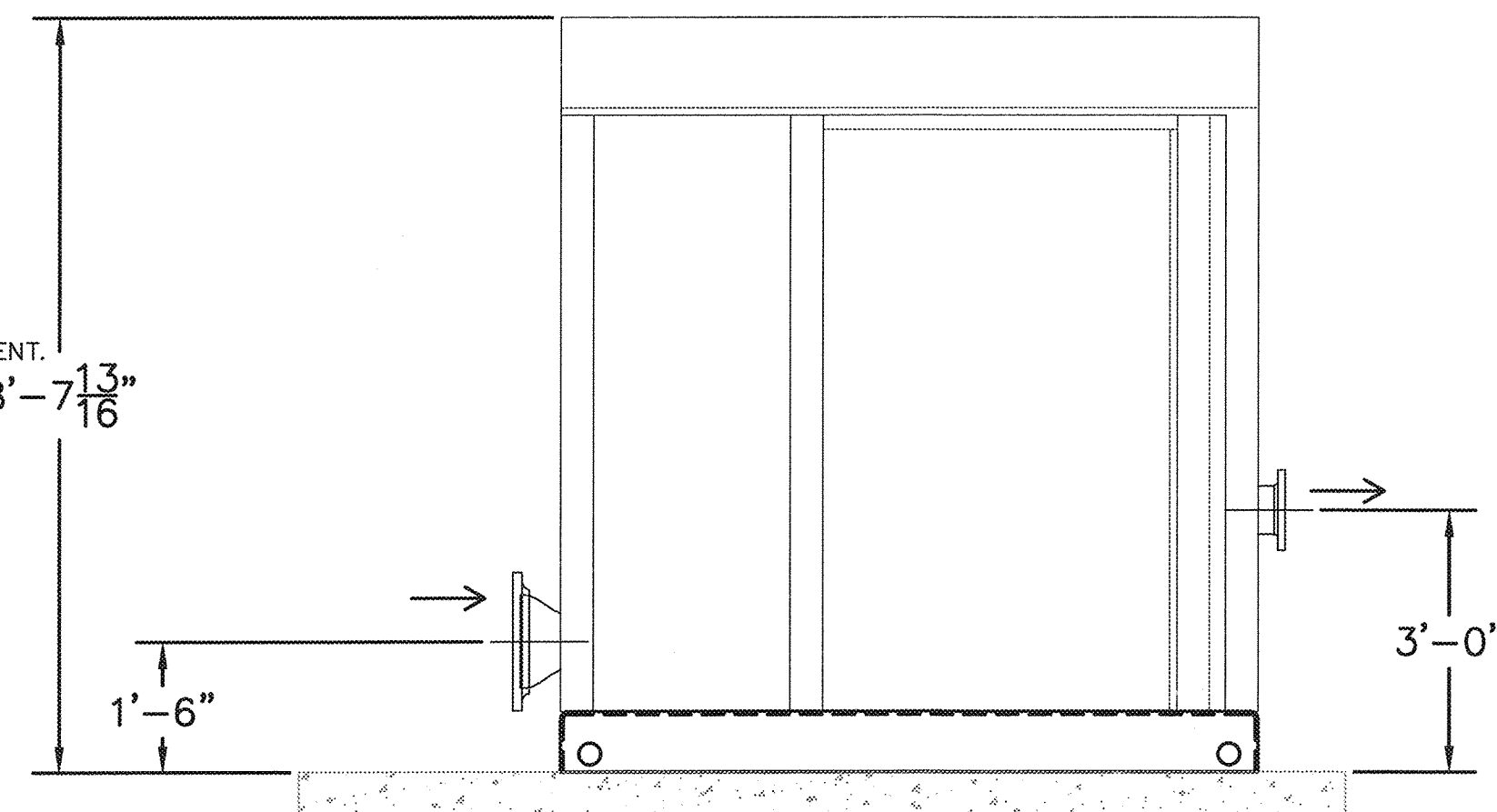
R. M. TOWILL CORPORATION  
2005 842 1133 2024 North King Street, Suite 200, Honolulu, Hawaii 96813-2004

**PUMP STATION SPECIFICATIONS:**  
**NAME:** CENTRAL MAUI PARK  
**STATION MODEL:**  
**HCFV5E-1-20X3/5VC-480-3-800-90**  
**STATION TOTAL PERFORMANCE:**  
**800GPM @ 90PSI**  
**DYNAMIC INLET PRESSURE: 6PSI (FLOODED)**  
**PUMP HORSEPOWER:**  
**PUMP NO.1: 5HP SUSTAIN**  
**PUMP NO.2-4: 25HP**  
**CHECK VALVE SIZE:**  
**PUMP NO.1: 2"**  
**PUMP NO.2-4: 3"**  
**ISOLATION VALVE SIZES:**  
**PUMP NO.1: 2"**  
**PUMP NO.2-4: 3"**  
**DISCHARGE ISOLATION VALVE: 6"**  
**RELIEF VALVE SIZE: N/A**  
**PUMP STATION DISCONNECT: 125 AMP**  
**POWER REQUIREMENTS: 480 V, 60 HZ, 3 PZ, 105 FLA**  
**EXHAUST FAN REQUIREMENTS FOR BUILDING:**  
**5200CFM COMPONENTS:**  
**A 25HP PUMP AND MOTOR**  
**B 5HP PUMP & MOTOR**  
**C CHECK VALVE**  
**D PUMP DISCHARGE ISO VALVE**  
**E PUMP INTAKE ISOLATION VALVE**  
**F TEMP SENSOR**  
**G SUBMERSIBLE LEVEL TRANSDUCER W/ FLOAT**  
**H 6" STATION INTAKE ISOLATION VALVE**  
**I PRESSURE/VAC GAUGE**  
**J CONTROL CABINET**  
**K HEAT EXCHANGER**  
**L PRESSURE TRANSDUCER W/ GAUGE**  
**M FLOW SENSOR**  
**N STATION DISCHARGE ISOLATION VALVE**  
**O COMPOSITE ENCLOSURE (SANDSTONE)**  
**P POWER PACK FOR ENCLOSURE POWER**  
**Q ENCLOSURE FAN**  
**R ENCLOSURE LOUVERS**

THE PUMP STATION PROPOSED HEREIN IS DESIGNED TO BE PLACED IN A PUMP HOUSE FOR PROTECTION FROM THE ENVIRONMENT. IF A PUMP HOUSE IS NOT USED, WATERTRONICS MUST BE NOTIFIED AT TIME OF QUOTATION SO SPECIAL PROVISIONS CAN BE MADE.

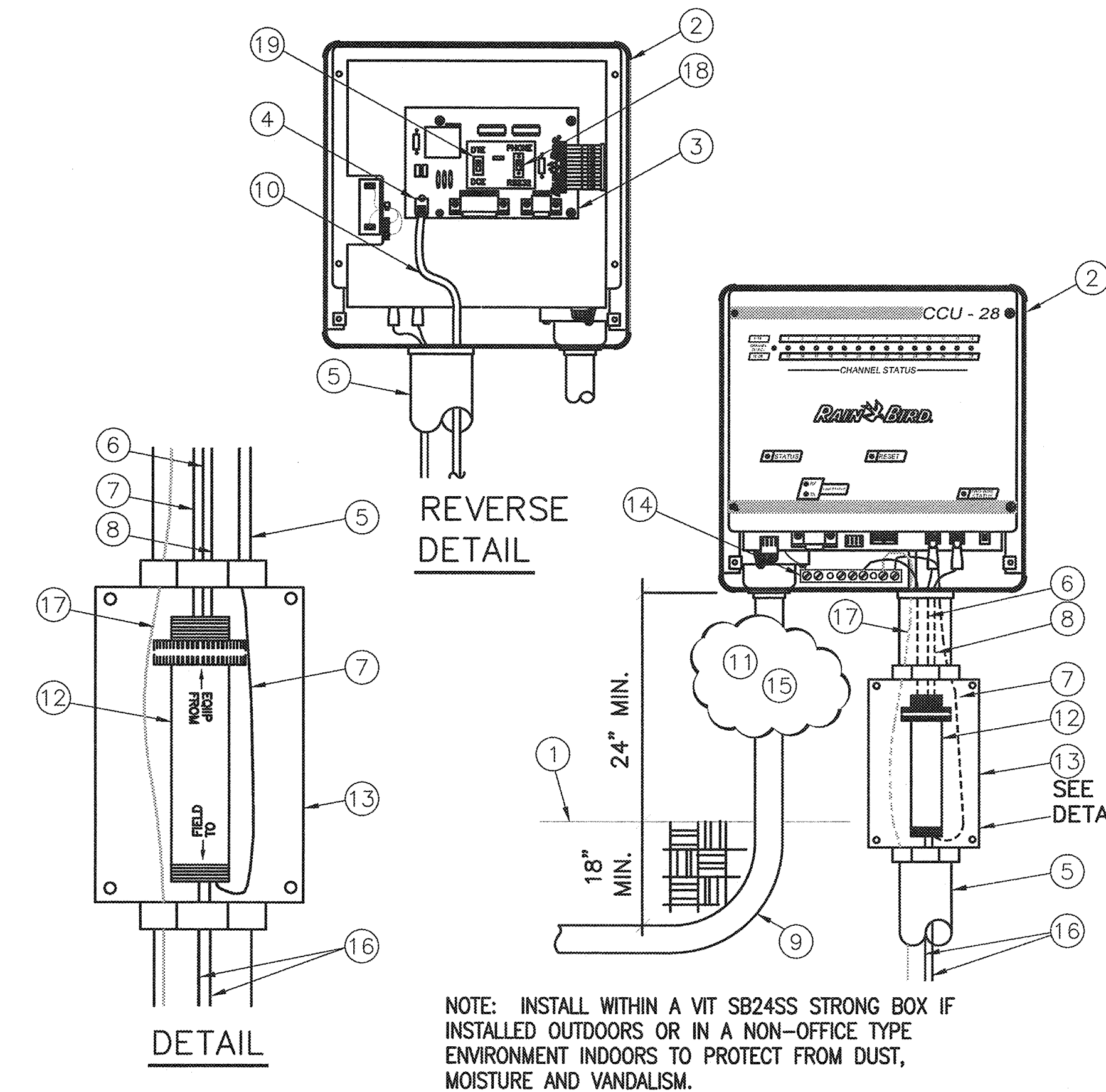


PUMP HOUSE/CONCRETE SLAB DIMENSIONS ARE RECOMMENDED MINIMUMS FOR NEC AND SERVICE CLEARANCE, AND ARE FOR ILLUSTRATION PURPOSES ONLY. PROJECT MANAGER SHALL BE CONSULTED ON FINAL DESIGN.



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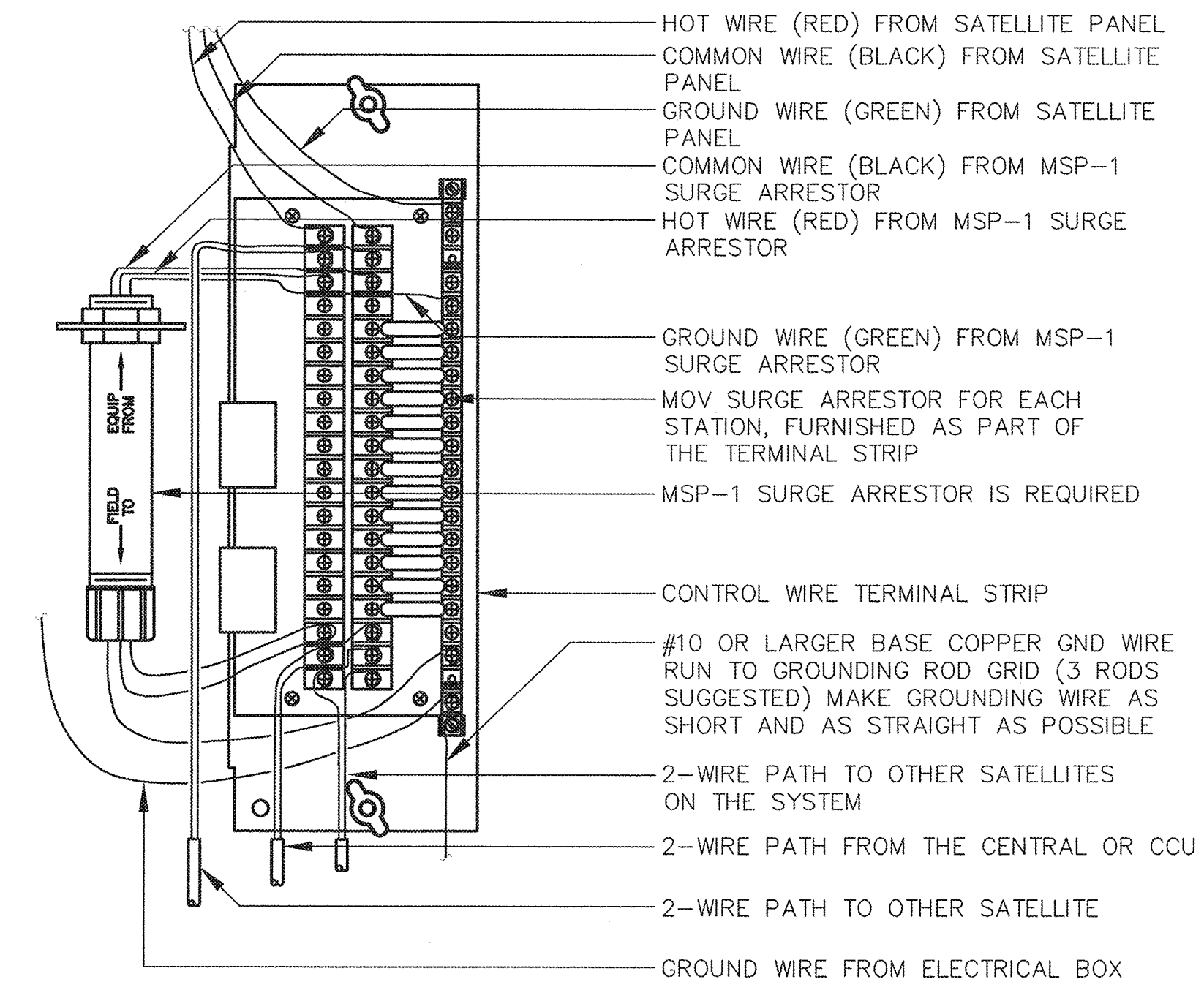
1 PUMP STATION DETAIL  
 IR-10 NOT TO SCALE



- 1 FINISH GRADE
- 2 RAIN BIRD WALL MOUNT CLUSTER CONTROL UNIT (CCU)
- 3 MODEM BOARD
- 4 RJ 11 PHONE JACK
- 5 CONDUIT (SIZE AS REQUIRED)
- 6 COMMON WIRE (BLACK) FROM MAXICABLE TO MSP-1 SURGE ARRESTOR AND FROM MSP-1 SURGE ARRESTOR TO CCU COMMON WIRE TERMINAL POST
- 7 GROUND WIRE (GREEN) TO GROUNDING BUSS BAR
- 8 HOT WIRE (RED) FROM MAXICABLE TO MSP-1 SURGE ARRESTOR AND FROM MSP-1 SURGE ARRESTOR TO CCU HOT WIRE TERMINAL POST
- 9 120 VOLT 60 CYCLE POWER SUPPLY
- 10 TELEPHONE COMMUNICATION CABLE TO RJ-11 JACK IN PVC CONDUIT
- 11 REFER TO LOCAL ELECTRIC CODE FOR CONNECTIONS
- 12 RAIN BIRD MSP-1 RECOMMENDED SURGE ARRESTOR
- 13 JUNCTION BOX - SIZE AS REQUIRED
- 14 CCU GROUNDING BUSS BAR
- 15 RAIN BIRD WARRANTY REQUIRES PROPER SURGE PROTECTION. USE INTERMATIC AQ2401 OR TRIPPLITE ISOBAR
- 16 MAXI TWO-WIRE PATH TO FIELD CONTROLLERS
- 17 #10 COPPER GROUND WIRE FROM CCU GROUNDING BUSS BAR TO GROUNDING GRID (SEE GROUNDING GRID MAXICOM DETAIL 305)
- 18 SET SWITCH TO PHONE
- 19 SET SWITCH TO DTE

2 CCU-28 2-WIRE/PHONE DETAIL  
 IR-10 NOT TO SCALE

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NOTE: ALL FIELD SATELLITE CONTROLLERS, CLUSTER CONTROL UNITS, WEATHER STATIONS AND ANY OTHER 120V POWER UNIT SHALL BE PROTECTED WITH A PAIGE 25090LED LIGHTNING/SURGE PROTECTION UNIT AND/OR AS DIRECTED BY THE MANUFACTURERS RECOMMENDATIONS AT TIME OF INSTALLATION.

4 24V ATELLIE SURGE PROTECTION DETAIL  
 IR-10 NOT TO SCALE

REVISION NO.	SYMBOL	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION <b>CENTRAL MAUI REGIONAL SPORTS COMPLEX            PHASE 3            WAILUKU, MAUI, HAWAII</b> <b>PUMP STATION/CCU DETAILS</b>					
DESIGNED: AGS		SUBMITTED: ---		DATE: DECEMBER 2015	
DRAWN: AGS/PPS		CHECKED: AGS		SCALE: AS NOTED	
APPROVED: <i>[Signature]</i>		DATE: DEC 2 2 2015		DRAWING NO. IR-10	
R. M. TOWILL CORPORATION <small>Professional Engineer - Electrical License #10000 - State of Hawaii        805 KALANANAKU AVENUE, SUITE 200, HONOLULU, HAWAII 96813-1133</small>		CHIEF ENGINEER			