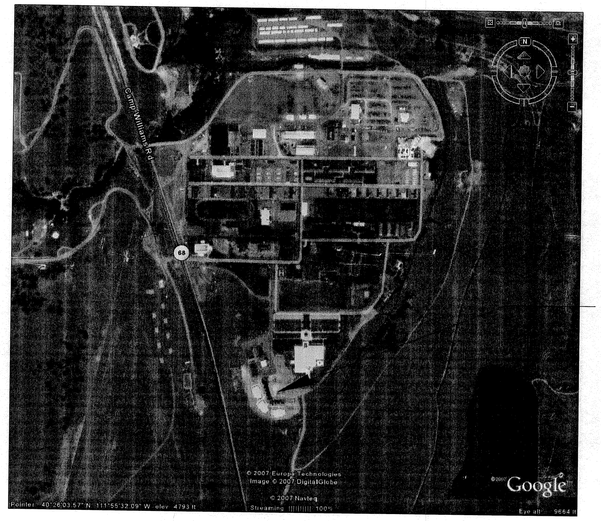
# CAMP WILLIAMS JLTC BUILDINGS 1-4

## PHASE 2 FINAL CONSTRUCTION DRAWINGS




PROJECT LOCATION

VICINITY MAP

### INDEX OF DRAWINGS


| | |
|---|---|
| GI-001 | COVER SHEET |
| P-101 | SITE PLAN |
| ES-101 | ELECTRICAL SITE PLAN |
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| LS-102 | IRRIGATION PLAN |
| LS-501 | PLANTING DETAILS |
| LS-502 | IRRIGATION DETAILS |


### CONTACT INFORMATION FOR PROJECT

| | | |
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| CIVIL ENGINEER | KEN ENGSTROM | 801-261-0090 |
| ELECTRICAL ENGINEER | GREG MENDENHALL | 801-966-9274 |

COVER SHEET
SCALE: NTS

N

V:\52863\active\186301941\Camp Williams\drawings\design\Camp Williams Phase 2 Cover Sheet.dwg
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CONSULTANTS:

STATE OF UTAH LICENSED LANDSCAPE ARCHITECT THOMAS G. MCKENNA #6147776-5301 7/02/09

BUILDING NAME:
UTAH NATIONAL GUARD JLTC

PROJECT TITLE:
BUILDINGS 1-4 CAMP WILLIAMS

| MARK | DATE | DESCRIPTION |
|---|---|---|

ISSUE TYPE: PH. 2 FINAL CONST. DWGS

ISSUE DATE: JULY 2, 2009

DFCM PROJECT NO: 070111480
CAD PROJECT NO: --
CAD DWG FILE:
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SHEET TITLE
COVER SHEET

SHEET NUMBER
GI-001

SHEET 01 OF 7

## PHASE 2 WORK DESCRIPTION

THE WORK FOR PHASE 2 INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:

1. INSTALLING ROCK MULCH, EDGING, PLANTINGS, BOULDERS, EROSION CONTROL BLANKET AND NATIVE SEED.
2. PULLING WIRES THROUGH EXISTING CONDUIT AND INSTALLING LIGHT POLES IN THE PROJECT AREA.
3. INSTALLING IRRIGATION IN THE PLANTING AREAS.

SITE PLAN
SCALE: 1" = 30'-0"

N


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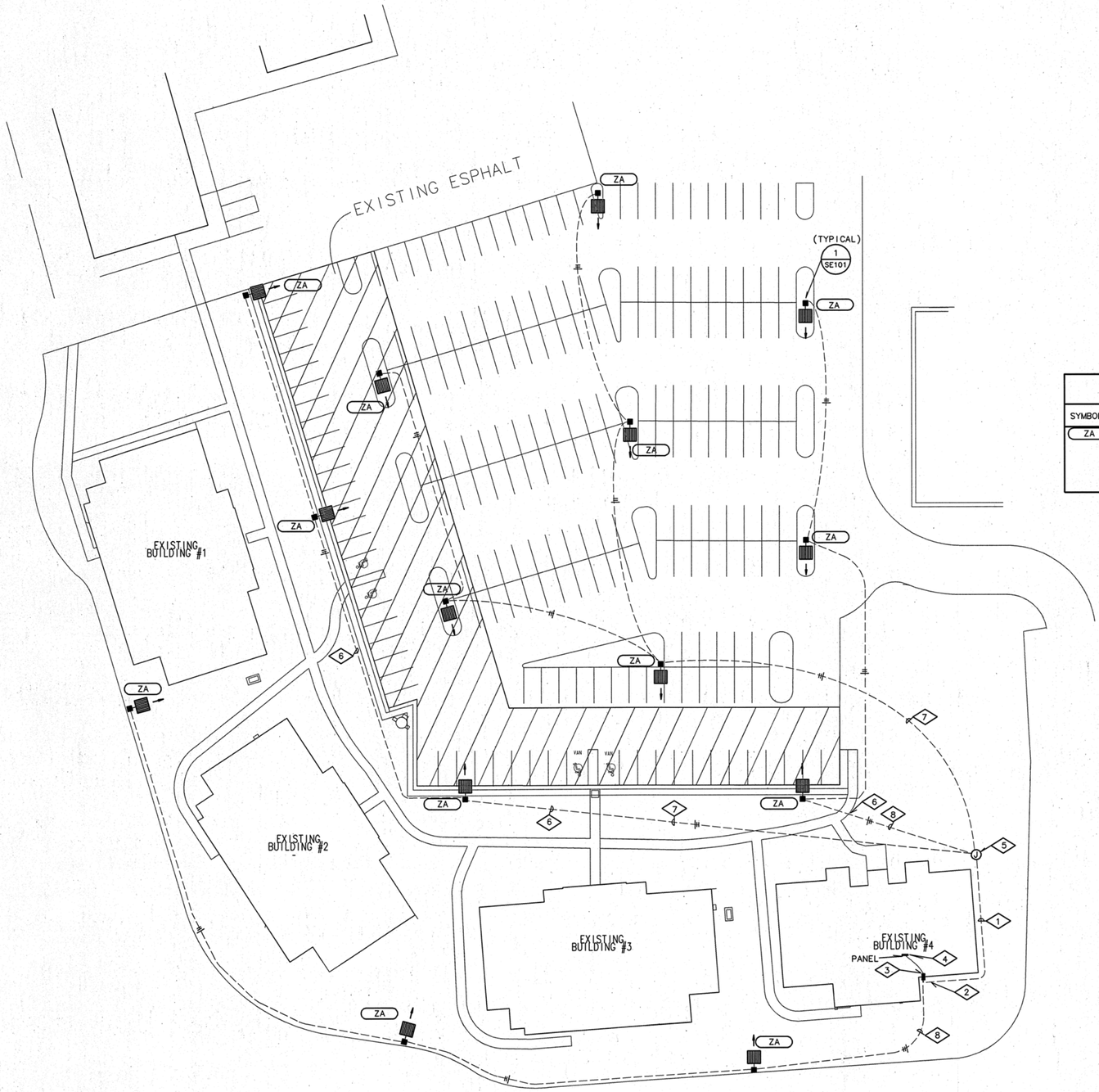
SHEET TITLE

PHASE 2
SITE PLAN

SHEET NUMBER

P-101

SHEET 2 OF 7




## ELECTRICAL SITE PLAN

SCALE: 1" = 30'- 0"

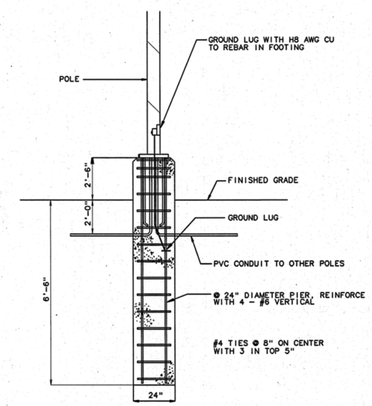
NORTH

## REFERENCE NOTES

1. (5)#6 THWN & (3)#8 THWN – 1 1/4" C.
2. RISE UP EXTERIOR OF BUILDING TO ACCESSIBLE CEILING SPACE OF FIRST FLOOR.
3. CORE DRILL THRU WALL AND ROUTE SITE LIGHTING CONDUITS IN ACCESSIBLE CEILING SPACE TO PANEL IN ELECTRICAL ROOM.
4. PROVIDE (2) NEW 20A 2P BREAKERS IN EXISTING MAIN PANEL
5. PROVIDE A 8" X 12" X10" PULL BOX W/ WEATHERTIGHT LID.
6. TUNNEL CONDUIT UNDER EXISTING SIDEWALK.
7. (3)#6 THWN – 1" C., CONNECT TO A NEW 20A 2P BREAKER INSTALLED IN EXISTING MAIN PANEL OF BUILDING #4.
8. (3)#8 THWN – 1" C., CONNECT TO A NEW 20A 2P BREAKER INSTALLED IN EXISTING MAIN PANEL OF BUILDING #4.

## LIGHTING FIXTURE SCHEDULE

| SYMBOL | CATALOG No. & DESCRIPTION | | MOUNTING | LAMPS |
|---|---|---|---|---|
| ZA | EMCO ECA18-1-QH-350PSMH-BRP-PCT/ 07TRS-30-11-BRP<br>McGRAW-EDISON CLM-A1R-350MP-208-AS-FG-BZ-R/ RTS-8A-30-SF-BZ | METAL HALIDE CUTOFF LUMINAIRE W/ TYPE V DISTRIBUTION & PHOTOCELL | 30 FT POLE | (1)MS350/H75/ED28 PS |




1 POLE BASE DETAIL N.T.S.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BUILDING NAME:

**UTAH NATIONAL GUARD JLTC**

PROJECT TITLE:

**BUILDING 1-4 CAMP WILLIAMS**

| MARK | DATE | DESCRIPTION |
|---|---|---|

ISSUE TYPE: PH2 CONSTRUCTION DWGS

ISSUE DATE: JULY 17, 2007

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CAD PROJECT NO: 440014
CAD DWG FILE: 440014SE
DRAWN BY: WKD
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SHEET TITLE

ELECTRICAL SITE PLAN

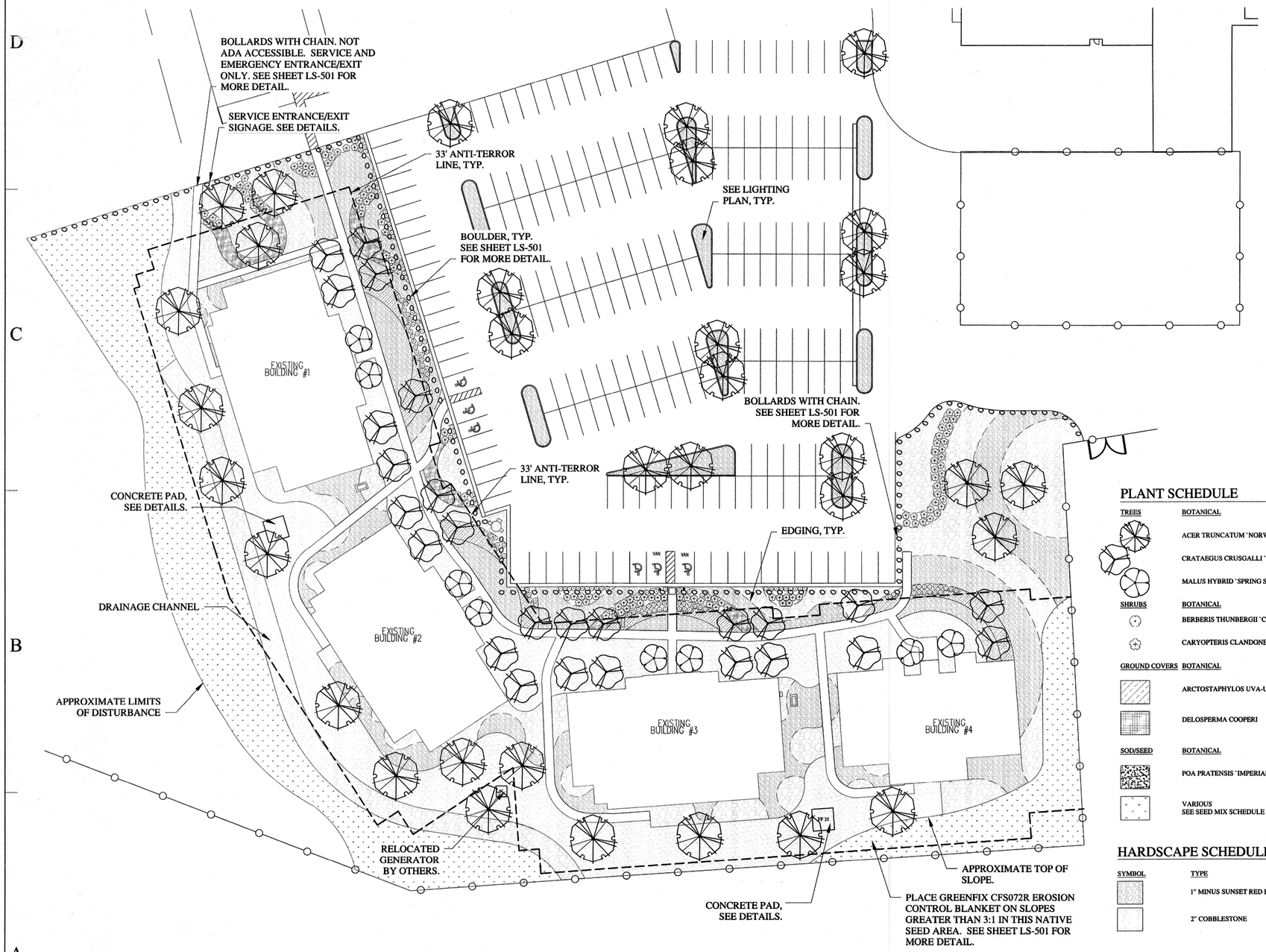
REGISTERED PROFESSIONAL ENGINEER No. 164251 GREGORY B. MENDENHALL STATE OF UTAH

SHEET NUMBER

ES-101

SHEET 2 OF 9

440014SE Monday 4/30/2007 9:7:29




## PLANT SCHEDULE

| TREES | BOTANICAL | COMMON | CONT | CAL | QTY |
|---|---|---|---|---|---|
| | ACER TRUNCATUM 'NORWEGIAN SUNSET' | NORWEGIAN SUNSET MAPLE | 25 GAL | 2"CAL | 33 |
| | CRATAEGUS CRUSGALLI 'INERMIS' | THORNLESS COCKSPUR HAWTHORN | 25 GAL | 2"CAL | 26 |
| | MALUS HYBRID 'SPRING SNOW' | SPRING SNOW CRAB | 25 GAL | 2"CAL | 8 |

| SHRUBS | BOTANICAL | COMMON | CONT | QTY |
|---|---|---|---|---|
| | BERBERIS THUNBERGII 'CRIMSON PYGMY' | CRIMSON PYGMY BARBERRY | 5 GAL | 134 |
| | CARYOPTERIS CLANDONENSIS 'DARK KNIGHT' | BLUE MIST SHRUB | 5 GAL | 121 |

| GROUND COVERS | BOTANICAL | COMMON | CONT | QTY |
|---|---|---|---|---|
| | ARCTOSTAPHYLOS UVA-URSI 'MASSACHUSETTS' | MASSACHUSETTS MANZANITA | FLAT @ 12" OC | 2,193 |
| | DELOSPERMA COOPERI | PURPLE ICE PLANT | FLAT @ 12" OC | 1,432 |

| SOD/SEED | BOTANICAL | COMMON | CONT | QTY |
|---|---|---|---|---|
| | POA PRATENSIS 'IMPERIAL BLUE' | IMPERIAL BLUE KENTUCKY BLUEGRASS | SOD | 25,165 SF |
| | VARIOUS SEE SEED MIX SCHEDULE ON LS-501 | NATIVE SEED MIX | SEED | 22,890 SF |

## HARDSCAPE SCHEDULE

| SYMBOL | TYPE | QTY |
|---|---|---|
| | 1" MINUS SUNSET RED ROCK MULCH | 173 CY |
| | 2" COBBLESTONE | 248 CY |

LANDSCAPE PLAN
SCALE: 1" = 30'-0"

N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SHEET TITLE

LANDSCAPE PLAN

SHEET NUMBER

LS-101

IRRIGATION PLAN
SCALE: 1" = 30'-0"

N

## IRRIGATION SCHEDULE

| SYMBOL | MANUFACTURER/MODEL/DESCRIPTION | PSI |
|---|---|---|
| EST LCS RCS CST SST | RAIN BIRD 1804-PRS-NP 15 STRIP SERIES 4" POPUP WITH PRESSURE REGULATOR, PURPLE CAP. | 30 |
| Q T H F | RAIN BIRD 1804-PRS-NP 5 SERIES MPR 4" POPUP WITH PRESSURE REGULATOR, PURPLE CAP. | 30 |
| Q T H F | RAIN BIRD 1804-PRS-NP 8 SERIES MPR 4" POPUP WITH PRESSURE REGULATOR, PURPLE CAP. | 30 |
| Q T H F | RAIN BIRD 1804-PRS-NP 10 SERIES MPR 4" POPUP WITH PRESSURE REGULATOR, PURPLE CAP. | 30 |
| Q T H TT TQ F | RAIN BIRD 1804-PRS-NP 12 SERIES MPR 4" POPUP WITH PRESSURE REGULATOR, PURPLE CAP. | 30 |
| Q T H TT TQ F | RAIN BIRD 1804-PRS-NP 15 SERIES MPR 4" POPUP WITH PRESSURE REGULATOR, PURPLE CAP. | 30 |
| 4 6 8 10 12 15 17 | RAIN BIRD 1804-PRS-NP ADJ 4" POPUP WITH PRESSURE REGULATOR, PURPLE CAP. | 30 |
| Q T H TT TQ F | RAIN BIRD 1804-R13-18 13'-18' ROTARY STREAM, W/1800 TURF SPRAY BODY, 4" POP-UP. | 45 |
| Q T H TT TQ F | RAIN BIRD 1804-R17-24 17'-24' ROTARY STREAM, W/1800 TURF SPRAY BODY, 4" POP-UP. | 45 |
| 1402 1408 1401 1404 | RAIN BIRD 1806-1400 FLOOD FLOOD BUBBLER 6" POPUP | 30 |

| SYMBOL | MANUFACTURER/MODEL/DESCRIPTION | PSI | GPM | RADIUS |
|---|---|---|---|---|
| 25 ARC | RAIN BIRD 5004-PL-MPR-SAM-NP TURF ROTOR, 4" POP-UP WITH FLOW SHUT-OFF DEVICE, MATCHED PRECIPITATION ROTOR, SEAL-A-MATIC CHECK VALVE, NON-POTABLE PURPLE CAP, ARC AND RADIUS AS PER SYMBOL. 25 FT=RED, 30 FT=GREEN, 35FT=BEIGE | 35 | | 24' |

| SYMBOL | MANUFACTURER/MODEL/DESCRIPTION |
|---|---|
| | RAIN BIRD PESB-NP-HAN ELECTRIC REMOTE CONTROL SCRUBBER VALVE, WITH NON-POTABLE HANDLE |
| | RAIN BIRD 44LRC 1" QUICK COUPLER VALVE, TWO PIECE BODY, LOCKING COVER |
| | MATCO-NORCA 200W |
| A | RAIN BIRD ESPLXM RAIN BIRD ESP-LX MODULAR SERIES. MODULAR CONTROLLER UP TO 32 STATIONS MAXIMUM WITH ESPLXMSM4- 4 STATION AND ESPLXMSM8- 8 STATION MODULES. INSTALL THE PROPER NUMBER OF MODULES TO ACCOMODATE THE NUMBER OF STATIONS IN THE SCOPE OF WORK. |
| BF | AMIAD 2" T FILTER 2" AMIAD T BRUSH FILTER WITH CLOGGING INDICATOR KIT. |
| POC 1" | POINT OF CONNECTION 2" |
| | IRRIGATION LATERAL LINE: PVC SCHEDULE 40 |
| | IRRIGATION MAINLINE: PVC SCHEDULE 40 |

Valve Callout
- Valve Number
- Valve Flow
- Valve Size

## VALVE SCHEDULE

| NUMBER | MODEL | SIZE | TYPE | PSI | PSI @ POC | GPM | PRECIP |
|---|---|---|---|---|---|---|---|
| 1 | RAIN BIRD PESB-NP-HAN | 1" | BUBBLER | 37.33 | | 10.00 | 15.32 in/h |
| 2 | RAIN BIRD PESB-NP-HAN | 1-1/2" | TURF SPRAY | 37.38 | | 40.26 | 2.27 in/h |
| 3 | RAIN BIRD PESB-NP-HAN | 1-1/2" | TURF SPRAY | 35.81 | | 41.62 | 1.50 in/h |
| 4 | RAIN BIRD PESB-NP-HAN | 1-1/2" | TURF SPRAY | 35.32 | | 35.93 | 1.62 in/h |
| 5 | RAIN BIRD PESB-NP-HAN | 1-1/2" | TURF SPRAY | 34.31 | | 40.77 | 1.65 in/h |
| 6 | RAIN BIRD PESB-NP-HAN | 1-1/2" | BUBBLER | 39.49 | | 8.00 | 15.32 in/h |
| 7 | RAIN BIRD PESB-NP-HAN | 1-1/2" | TURF ROTOR | 40.50 | | 39.86 | 0.53 in/h |
| 8 | RAIN BIRD PESB-NP-HAN | 1-1/2" | TURF SPRAY | 34.96 | | 31.32 | 1.56 in/h |
| 9 | RAIN BIRD PESB-NP-HAN | 1-1/2" | TURF SPRAY | 36.79 | | 37.08 | 1.75 in/h |
| 10 | RAIN BIRD PESB-NP-HAN | 1-1/2" | TURF SPRAY | 34.50 | | 43.99 | 2.92 in/h |
| 11 | RAIN BIRD PESB-NP-HAN | 1-1/2" | TURF SPRAY | 35.67 | | 45.14 | 1.63 in/h |
| 12 | RAIN BIRD PESB-NP-HAN | 1-1/2" | TURF SPRAY | 34.83 | | 43.52 | 2.73 in/h |
| 13 | RAIN BIRD PESB-NP-HAN | 1" | BUBBLER | 32.59 | | 6.00 | 15.32 in/h |
| 14 | RAIN BIRD PESB-NP-HAN | 1-1/2" | TURF SPRAY | 34.99 | | 35.69 | 2.08 in/h |
| 15 | RAIN BIRD PESB-NP-HAN | 1-1/2" | TURF SPRAY | 35.97 | | 35.06 | 1.97 in/h |
| 16 | RAIN BIRD PESB-NP-HAN | 1-1/2" | TURF SPRAY | 37.26 | | 42.14 | 1.90 in/h |
| 17 | RAIN BIRD PESB-NP-HAN | 1-1/2" | TURF SPRAY | 35.04 | | 44.77 | 2.02 in/h |
| 18 | RAIN BIRD PESB-NP-HAN | 1-1/2" | BUBBLER | 34.32 | | 3.00 | 15.32 in/h |
| 19 | RAIN BIRD PESB-NP-HAN | 1-1/2" | TURF SPRAY | 35.66 | | 39.55 | 3.33 in/h |
| 20 | RAIN BIRD PESB-NP-HAN | 1-1/2" | BUBBLER | 40.09 | | 19.00 | 15.32 in/h |

## NOTES

1. THIS SYSTEM IS BASED UPON AN AVAILABLE STATIC PRESSURE OF 55 PSI MINIMUM. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL CONFIRM THE STATIC WATER PRESSURE AND THE SIZE OF THE POINT OF CONNECTION (POC).
2. COORDINATE AND LOCATE ALL EXISTING UTILITIES ON THE SITE PRIOR TO EXCAVATION.
3. THIS PLAN IS DIAGRAMMATIC. SOME EQUIPMENT MAY BE SHOWN IN PAVED AREAS AND BUILDINGS FOR PLAN CLARITY. ALL EQUIPMENT IS TO B EPLACED IN LANDSCAPE AREAS.
4. INSTALL SLEEVES UNDER ALL PAVED SURFACES WHERE LINES AND CONTROL WIRES CROSS UNDER. SLEEVE SIZE SHALL BE 2 SIZES LARGER THAN THE LINE. EXTEND 6" BEYOND THE PAVED SURFACE ON EACH SIDE.
5. INSTALL MANUAL DRAIN VALVES AT ALL LOW POINTS ALONG IRRIGATION MAIN LINE AND EACH SIDE OF SIDEWALK WHERE MAIN LINE CROSSES UNDER.
6. INSTALL VARIABLE ARC NOZZLES ON SPRINKLER HEADS AS NEEDED.
7. INSTALL 4" POPUPS IN LAWN AREAS.
8. INSTALL 6" POPUPS IN SHRUB BEDS.
9. INSTALL A RAIN SENSOR BY RAINBIRD # RSD-BEX AS PER MANUFACTURER'S RECOMMENDATIONS.


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CAD DWG FILE:
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SHEET TITLE
IRRIGATION PLAN

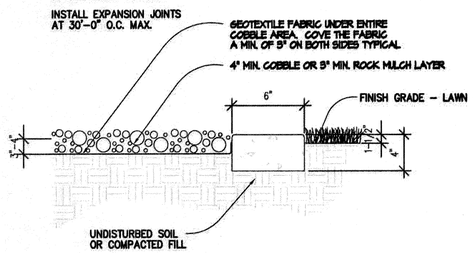
SHEET NUMBER
LS-102

SHEET 5 OF 7

NOTES:

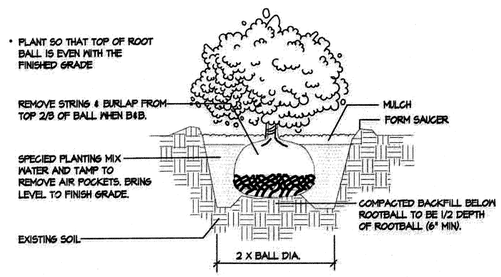
PROVIDE A 1/8" RADIUS AT ALL EDGES TYPICAL

INSTALL EXPANSION JOINTS AT 30'-0" O.C. MAX.



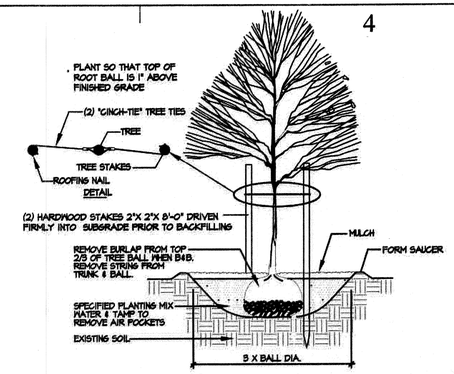

## A ROCK MULCH/CONCRETE EDGING DETAIL

NOT TO SCALE




## B SHRUB PLANTING

NOT TO SCALE

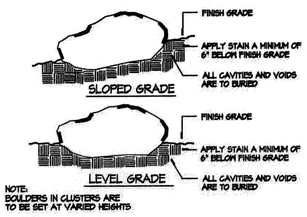



## C TREE PLANTING AND STAKING

NOT TO SCALE

BOULDER NOTES

1. Boulders are specified in tons, with a cubic yard being equal to 1.7 tons. Boulders provided by Camp Williams. Contractor responsible to provide equipment to move boulders on site.
2. Installer is to be responsible to prevent any severe chipping or damage to boulders during the placement process.
3. Boulders are to be placed using cables from a Loader Boom or a Boulder Placement Boom.
4. Boulder is to ultimately be set to a minimum of 1/3 buried (See Detail).
5. All cavities and voids near the bottom of the boulder are to be set below finish grade.
6. Boulders to be minimum 3' diameter. Place 6' O.C. per plan.




## D BOULDER DETAIL

NOT TO SCALE

1. INSTALL 4"X 6" CONCRETE MOWSTRIP BETWEEN ALL SHRUB AND ROCK MULCH AREAS AND TURF AREAS.
2. APPLY PRE-EMERGENT TO ALL SHRUB AND GROUNDCOVER BEDS BEFORE BARK MULCH.
3. TOP DRESS ALL SHRUB AREAS WITH 4" DEEP OF LONG STRAND SHREDDED BARK. GROUNDCOVER BEDS SHALL HAVE 2" MULCH.
4. TURF AREAS SHALL BE KENTUCKY BLUEGRASS SOD MIX.
5. SEE DETAILS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
6. INSTALL 6 INCHES TOP SOIL FOR GROUNDCOVER PLANTING BEDS AND 12 INCHES FOR SHRUB PLANTING BEDS.
7. ALL SHRUB BEDS ARE TO BE IRRIGATED WITH BUBBLERS AND ALL TURF AREAS ARE TO BE SPRAY IRRIGATED PER FINAL IRRIGATION PLAN.
8. ALL OTHER AREAS ARE TO BE NATIVE WILDFLOWER AND GRASS MIX PER LEGEND PROVIDED. THESE AREAS ARE TO BE NON IRRIGATED AREAS. QUICK COUPLERS IN THE VICINITY WILL BE PLACED FOR WATERING TO BE DONE BY HOSE ON AN INTERMITTENT BASIS AS NECESSARY.
9. ALL OPEN SPACE TO REMAIN NATIVE
10. CONTRACTOR TO PROVIDE ROCK MULCH AND COBBLESTONE SAMPLES TO OWNER AND LANDSCAPE ARCHITECT FOR APPROVAL.
11. CONTRACTOR RESPONSIBLE TO SATISFY SELF OF SITE CONDITIONS BEFORE ANY CONSTRUCTION BEGINS.
12. IF DISCREPANCIES EXIST BETWEEN PLANT SCHEDULE QUANTITIES AND PLAN, THE PLAN SHALL DICTATE.

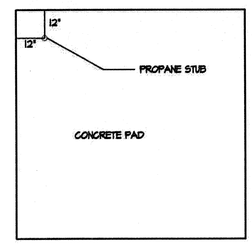
## E PLANTING NOTES

NOT TO SCALE

| TYPE | BROADCAST | DRILLED | PERCENTAGE |
|---|---|---|---|
| Slender Wheat Grass (Agropyron trachucaulum) | 2.75 | 2.06 | 13.75% |
| Bluebunch Wheat Grass (Agropyron spicatum) | 2.75 | 2.06 | 13.75% |
| Sheep Fescue (Festuca ovina) | 0.80 | 0.60 | 4.00% |
| Sandberg Bluegrass (Poa sandbergii) | 0.50 | 0.38 | 2.50% |
| Western Wheat Grass (Agropyron smithii) | 2.75 | 2.06 | 13.75% |
| Green Needlegrass (Stipa viridula) | 2.75 | 2.06 | 13.75% |
| Protrate Summer Cypress (Kochia prostata) | 1.50 | 1.13 | 7.50% |
| Blanket flower (Gaillardia aristata) | 2.00 | 1.50 | 10.00% |
| Blue flax (Linum lewisii) | 1.50 | 1.13 | 7.50% |
| Red Mexican Hat (Ratibida columnaris) | 0.25 | 0.18 | 1.25% |
| Basin Big Sagebrush (Artemisia tridentata tridentata) | 0.15 | 0.11 | 0.75% |
| Rubber Rabbitbrush (Chrysothamnus nauseosus) | 0.30 | 0.23 | 1.50% |
| Winterfat (Ceratoides lanata) | 2.00 | 1.50 | 10.00% |
| Total Pounds/Acre | 20.0 | 15.0 | 100.00% |

## F NATIVE GRASS AND WILDFLOWER MIX

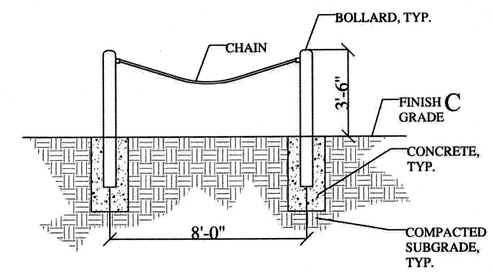
NOT TO SCALE




NOTE: STUB PROPANE 12" FROM EDGE OF CONCRETE PAD FOR FUTURE BBQ (BY OTHERS)

## G CONCRETE PAD DETAIL

NOT TO SCALE




## H BOLLARD DETAIL

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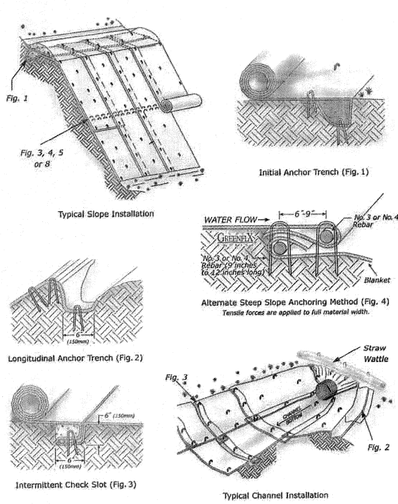
GREENFIX AMERICA

**Installation Diagrams**




## I EROSION CONTROL BLANKET

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### Recommended Installation Guidelines

***Subgrade*** - The first installation step is to make sure that the subgrade is properly prepared. Once the subgrade has been verified to be properly graded and compacted and generally free of ruts and projecting stones or clods, the blanket can be deployed. Generally, normal construction equipment should not cause significant rutting of the subgrade.

***Other Layers*** - In some systems, another material such as mulch may underlie the blanket and therefore be placed first. When situations require the blanket to be laid on top of another material, care must be taken to prevent disruption of or damage to the underlying materials. Never use normal construction equipment directly on top of blanket.

***Seeding*** - In temporary, degradable systems, seed is generally spread on or drilled or sprigged into the subgrade prior to unrolling of the blanket. Many long-term, nondegradable systems are unrolled, and filled with soil prior to seeding.

***Positioning and Anchoring*** - In all cases, each blanket should be unrolled as close as possible to its intended final position to minimize the need for dragging which can dislocate underlying materials or dig up or disturb the prepared subgrade and/or seeding. Staking, pinning or stapling blankets to secure their position is commonly done with a frequency and at the relative locations required to assure stability on the terrain in question.

***Wind*** - Large panels of blankets can be lifted up by gusts of wind if not properly secured. Deployed materials are most vulnerable prior to anchoring. Wind displacement can cause damage such as tearing or less obvious, but equally as problematic, damage such as loss of fibers. Identified damage should be patched. Liberal use of temporary weights such as dirt mounds or sandbags is the most common strategy to avoid wind pick-up.

### Field Joining and Anchoring

Proper installation of blankets is critical. Blanket panels are joined side to side and end to end by overlapping or "shingling" in the direction of flow. Overlaps are typically secured by staking, pinning, or stapling at regular spacings along the overlap. Longitudinal overlaps must be a minimum of 3" along the overlap length. Blanket ends may be spliced by overlapping 1' (in the direction of water flow) with the upstream blanket placed on top of the downstream blanket. This overlap should be anchored at 1' spacing across the width of the blanket.

Typically blankets are anchored with 11 ga. U-shaped staples, 6" or 8" long depending upon the looseness or compaction of the soil. Proper anchoring of rolled blankets also includes the following practices:

- Terminal trenches (typically 6 inches wide by 12 inches deep) are made at the top and bottom (crest and toe) of all covered slopes and at the end of all lined channels.
- Intermediate trenches, or "check slots" (typically 6 inches wide by 6 inches deep) or two closely spaced rows of anchors may be used transverse to flows at intermittent points down a slope or along a channel to prevent continuous flows beneath the blankets.
- "Patterning" staking, pinning, or stapling of positioned blankets accomplishes uniform anchoring. The pattern depends on the steepness of the slope or channel as shown in staple guidelines.

### Penetrations

It is important that at the point of all penetrations through a blanket additional anchorage be provided. The most common penetration involves a pipe or manhole around which the blanket can be easily cut to fit closely and subsequently anchored. Penetrations and other structure interferences are notoriously prone to concentrated erosion. Therefore, special attention to detail is necessary when any of these features are encountered.

### Repairs

If a repair is required because the blanket has been accidentally damaged, a patch of the same base blanket type should be cut to fit over and sufficiently beyond the damaged area to permit joining to or anchoring through the parent blanket.

### Backfilling

Blankets which are installed prior to seeding must be subsequently seeded and, when directed, backfilled with soil. These blankets must be of the blanket type, meaning they must have an open structure to facilitate soil filling. Typically, once seeded, some day backfilling is preferred. Depending on the system design, the cover soil may be a special topsoil or simply general backfill. In either case, consideration must be made for the proper placement of the soil layer to completely fill the blanket without overfilling (which may prevent germination) or causing construction damage.

*For Installation Assistance:*

GREENFIX AMERICA

800-929-2184 (760) 348-7600
Fax (760) 348-3097
www.greenfix.com

### Supplement To General Installation Guidelines/ Slopes And Channels

***Subgrade / Slopes & Channels:*** On slopes and channels, the site must be shaped to the design specifications (Slope gradient, Density of soil & etc.) The site must be groomed to be free of soil clods, clumps, rocks or equipment imprints of any kind that would prevent the blanket from lying flush against the surface contour.

***Seeding / Slopes & Channels:*** For non soil filled applications on slopes and channels, hydro-seed, board cast or drill seed over prepared soil before blanket is deployed. Make sure to hydro-mulch after seeding and before the blanket is installed to ensure the seed is in direct contact with the soil. Seed mixes with adequate pure live seed ratios must be used to ensure proper germination ratios and successful vegetation establishment. Consult your local distributor or seed supplier to obtain a proper seed mix.

***Anchor Trench & Check Slots / Slopes & Channels:*** Anchor trenches are required to securely fasten the blanket to the subgrade surface. Anchor trenches and intermediate check slots are typically 6-9 inches wide and 6-9 inches deep. The blanket is installed in the trench and fastened to the bottom with staples spaced 1-3 ft. apart. The anchor trenches and checks slots are then back filled and compacted in such a manner not to damage the blanket. (See Slope & Channel Isometric View)

***Anchor Trench / Slopes:*** Anchor trenches should be installed at least 1 ft. beyond the crest of the slope. (See Longitudinal Anchor Trench Fig. 2)

***Anchor Trench / Channels:*** In a channel anchor trenches are installed at the beginning of the channel. (See Initial Channel Anchor Trench Fig. 1 & Longitudinal Anchor Trench Fig. 2)

***Check Slots / Slopes:*** For maximum performance of your product, an intermediate check slot may be required on long slopes that exceed one roll length. Intermediate check slots should be spaced approximately 20 – 60 ft. intervals down the slope depending on the blanket type, slope length and soil conditions. Consult your local distributor or blanket manufacturer directly to confirm the check slot installation procedure. (See Intermediate Check Slot Fig. 3)

***Check Slots / Channels:*** In a channel, check slots are spaced approximately 25 – 60 ft. intervals down stream depending on flow conditions, channel gradient and time to vegetate. (See Intermediate Check Slot Fig. 3 & Cannel Isometric View) Field Joining And Anchoring: The blanket is rolled down the slope or channel loosely to maintain contact with the soil at all times. Side to side overlap between rolls are 3-4 inches minimum and anchored on 2-3 ft. intervals minimum. End to end splice overlap between rolls are 1-3 ft. minimum and anchored with two rows of staples on 1 ft. intervals minimum. Overlaps are shingled in the direction of flow.

Staple patterns will vary depending on application, soil type, slope or channel gradient and etc. (See Staple Pattern Guidelines) A rule of thumb for estimating the amount of staples required for a project is as follows:

Steep Slopes / 1:1 and greater . . . . . 2-4 staples per sq. yd.
High Flow Channel . . . . . 3-4 staples per sq. yd.
Low Flow Channel . . . . . 2-3 staples per sq. yd.

Install additional staples as required to ensure the blanket is always in contact with the soil, regardless of suggested staple patterns.

***Anchoring Devices:*** Use a 6 inch x 1 inch 11 gauge minimum metal staple in heavy compacted soil. In loose soil conditions use a 8 inch x 1 inch 11 gauge minimum metal staple. Other approved anchoring devices in loose soil conditions are as follows:

12 inch x 1.5 inch metal staples.

18 inch pins with 1.5 inch diameter washer.

12-30 inch J-Shape pins made from bent 1/4 inch wire or rebar.

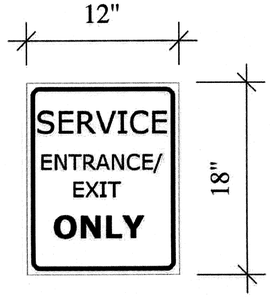
Install staples or pins so that the top of the anchor is flush with the soil surface.

***Special Installation & Conditions:*** The installation guidelines are recommendations only. You should always confirm the installation procedure with your local distributor or blanket manufacturer to ensure maximum performance of the product. All design specifications prepared by a qualified design consultant or engineer supersede these recommended guidelines.

Product selection software, which some manufactures claim to be design software, use versions of the universal soil loss equation, national rainfall and soil survey charts to fabricate a formula that will make a mathematical blanket type selection.

This approach to computerize product selection should never be used to select a blanket type for a specific project application because it circumvents the base line data collection process that all project specifiers regardless of scope are required to do if any hope of success is expected. This type of evaluation does not allow the specifiers to use site specific project data that is directly revelant to the application design and product performance.

The USLE is designed to calculate total tons of potential soil erosion from a site using historical regional data as factors in the equation. These assumptions do not and cannot quantify or guarantee product performance. Design software may be useful in channel design to determine or limit the potential shear stress forces the channel lining materials are subjected to.




## J SERVICE ENTRANCE/EXIT SIGNAGE

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**State of Utah**
Department of Administrative Services

Division of Facilities Construction & Management
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CONSULTANTS:

STATE OF UTAH
THOMAS G. MCKENNA
#6147776-5301
7/02/09
LICENSED LANDSCAPE ARCHITECT

BUILDING NAME:

UTAH NATIONAL GUARD JLTC

PROJECT TITLE:

BUILDINGS 1-4
CAMP WILLIAMS

| MARK | DATE | DESCRIPTION |
|---|---|---|

ISSUE TYPE: PH2 FINAL CONSTRUCTION DWGS

ISSUE DATE: JULY 2, 2009

DFCM PROJECT NO: 070111480
CAD PROJECT NO: --
CAD DWG FILE:
DRAWN BY: TGM
CHK'D BY:TGM
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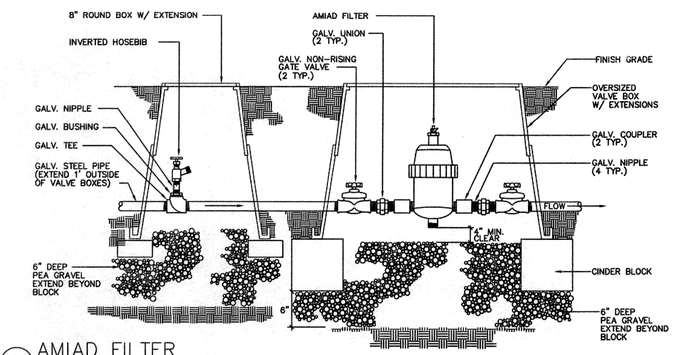
SHEET TITLE

PLANTING DETAILS

SHEET NUMBER

LS-501

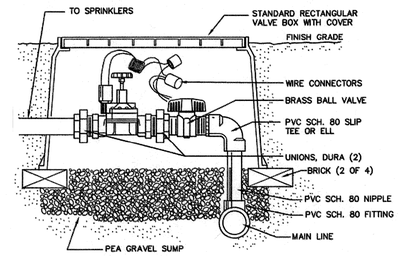
SHEET 6 OF 7



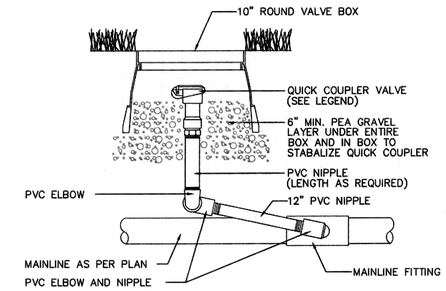

A AMIAD FILTER
NOT TO SCALE

NOTES

1. INSPECTION: PRIOR TO BACKFILLING AROUND VALVE BOX, SECURE INSPECTION OF INSTALLATION BY ENGINEER. SYSTEM MUST BE PRESSURIZED DURING INSPECTION.
2. PLACEMENT: FLUSH MAIN LINES PRIOR TO INSTALLING CONTROL VALVES. INSTALL CONTROLLERS AND WIRING PER MANUFACTURER'S RECOMMENDATIONS.
3. BACKFILL: INSTALL BACKFILL AROUND PIPE AND VALVE BOX AND COMPACT TO PREVENT SETTLING
4. VALVE BOX: NO MORE THAN TWO VALVES PER STANDARD VALVE BOX.

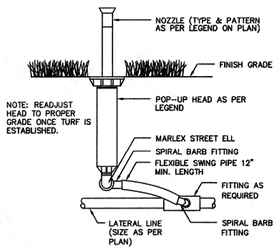



B REMOTE CONTROL VALVE
NO SCALE

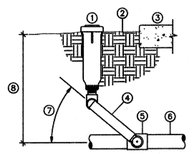



NOTE: PRE-ASSEMBLED SWING JOINT BY SPEARS OR LASCO MAY BE USED.

C QUICK COUPLER VALVE
NOT TO SCALE

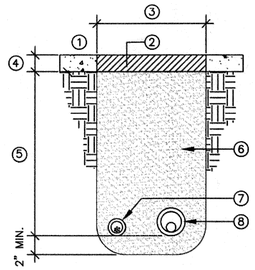



D POP-UP SPRAY HEAD
NOT TO SCALE



1. POP-UP ROTOR SPRINKLER – SEE LEGEND
2. FINISH GRADE
3. NOTE: ALL HEADS TO BE PLACED 2" CLEAR OF ALL HARDSCAPE SURFACES
4. SCH. 80 THREADED NIPPLE W/ MARLEX STREET ELBOWS
5. PVC SCH. 40 SxSxT TEE (OR ELL)
6. PVC LATERAL LINE, SIZE AS NOTED ON PLAN
7. SWING JOINT ARM INSTALLED AT ANGLE BETWEEN 30 AND 45 DEG. OF LATERAL PIPE. USE MALE THREAD MODEL
8. DEPTH – SEE NOTES & TRENCH DETAIL

E POP-UP GEAR DRIVE ROTOR SPRINKLER
NTS

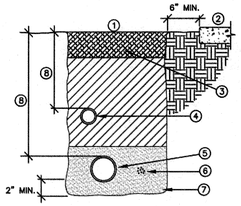



1. EXISTING CONCRETE / ASPHALT
2. SAWCUT & PATCH CONCRETE/ ASPHALT AS REQUIRED
3. WIDTH AS REQUIRED
4. 5" DEPTH FOR CONCRETE 3" DEPTH FOR ASPHALT
5. DETPH AS REQUIRED TO MATCH MAINLINE (18"–30") OR LATERAL (8"–14") PIPING OR CONTROL WIRES (18"–30")
6. COMPACTED BACKFILL FREE FROM ROCKS GREATER THAN 1 1/2" IN DIAMETER.
7. CONTROL WIRES 6" TO EITHER SIDE OR 6" UNDER MAINLINE.
8. PVC MAIN LINE/LATERAL

NOTES:

- SLEEVES SHALL BE PVC SCH. 40 PIPE.

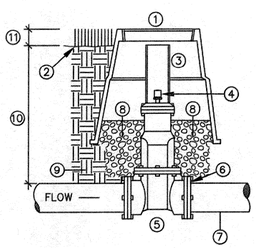
F SLEEVING DETAIL
NTS




1. IF LAWN IS EXISTING, REPLACE SOD AS PER OWNER'S SPECIFICATIONS
2. ADJACENT HARD SURFACE
3. TOPSOIL FREE FROM ROCKS GREATER THAN 1" DIAMETER
4. NON-PRESSURE LATERAL LINE
5. PRESSURE MAIN LINE
6. DIRECT BURIAL, LOW VOLTAGE CONTROL WIRES; TAPE AND BUNDLE AT 10' O.C. PLACE 6" EITHER SIDE OF PIPE OR 6" BELOW.
7. MORTAR SAND BEDDING 2" BELOW AND ABOVE PIPE. NO ROCKS LARGER THAN 1" DIAMETER TO GO BACK INTO TRENCH AS PER WRITTEN SPECIFICATIONS.
8. PIPE DEPTHS:
   MAIN LINE: 18 – 30" COVER
   LATERAL LINE: 12" COVER

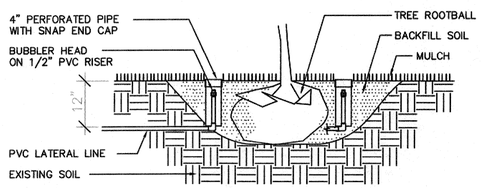
NOTE: SEE SLEEVING DETAIL FOR TRENCHING IN PAVED AREAS.

G TRENCH DETAIL
NTS



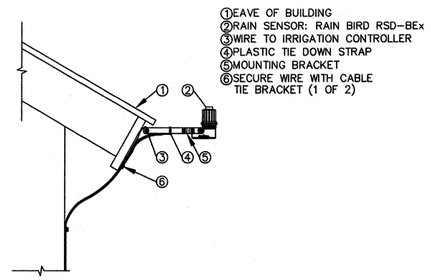

1. 10" ROUND GREEN PLASTIC VALVE BOX, W/ BOLT LOCK, CARSON-BROOKS OR EQUAL
2. FINISH GRADE
3. 6" PVC SCH. 40 PIPE SLEEVE, 4" – 6" BELOW GRADE
4. 2" SQUARE OPERATING NUT
5. FLANGE x FLANGE GATE VALVE SEE EQUIPMENT SCHEDULE
6. SCH. 80 FLANGE ADAPTER
7. MAIN WATER SUPPLY LINE
8. 6" MIN. GRAVEL
9. SUBGRADE COMPACTED TO 90%
10. DEPTH: 18" – 30"
11. SHRUBS–2"; SOD–1 1/2"; SEED–1"

H GATE VALVE
NTS




NOTE: TWO BUBBLERS PER TREE ON ALL TREES LOCATED OUTSIDE LAWN AREAS.

I TREE BUBBLER DETAIL
NOT TO SCALE



1. EAVE OF BUILDING
2. RAIN SENSOR: RAIN BIRD RSD–BEx
3. WIRE TO IRRIGATION CONTROLLER
4. PLASTIC TIE DOWN STRAP
5. MOUNTING BRACKET
6. SECURE WIRE WITH CABLE TIE BRACKET (1 OF 2)

J RAIN SENSOR
NTS RSD–BEx ROOF BRACKET


State of Utah
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STATE OF UTAH LICENSED LANDSCAPE ARCHITECT THOMAS G. MCKENNA #6147776-5301 7/02/09


BUILDING NAME:

UTAH NATIONAL GUARD
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CAMP WILLIAMS

| MARK | DATE | DESCRIPTION |
|---|---|---|

ISSUE TYPE: PH2 FINAL CONSTRUCTION DWGS

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SHEET 7 OF 7