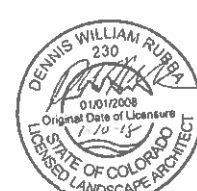


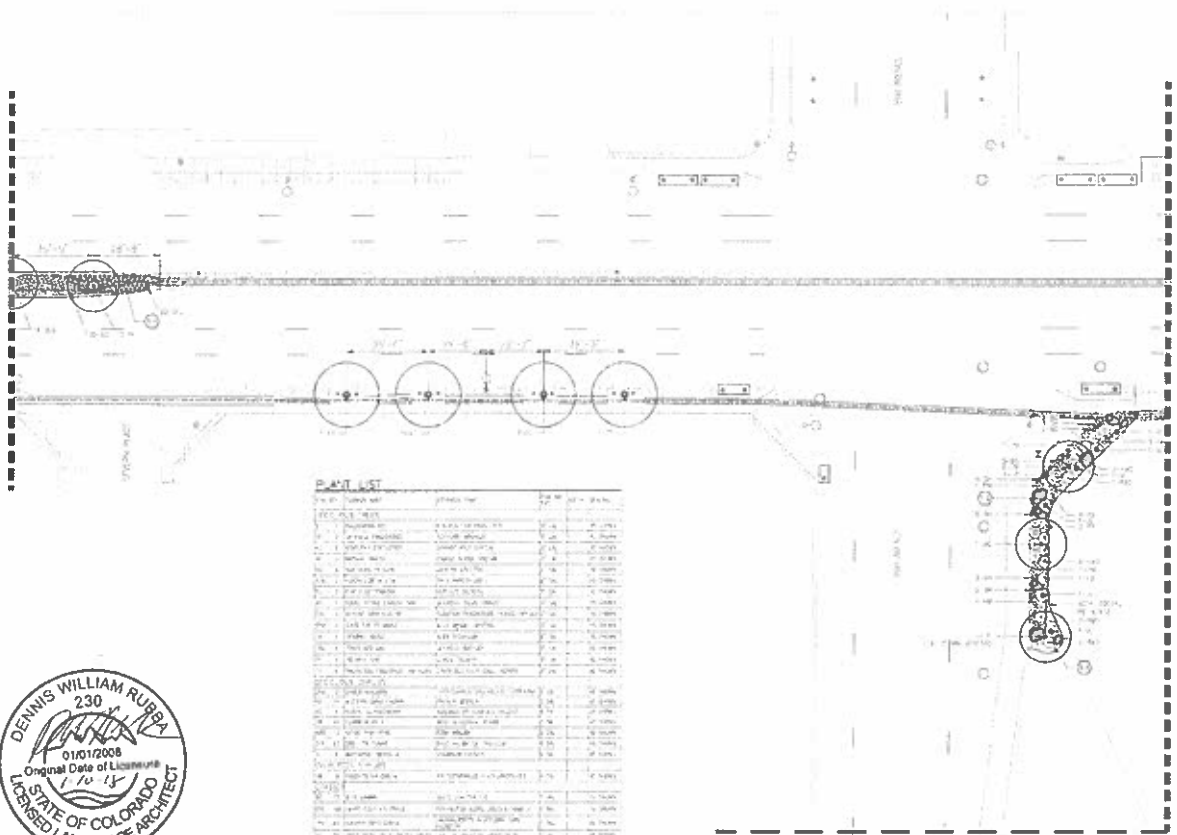
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TSOUVARAS SAMOIS HOLDENNESS
CORPORATE ENGINEERS



PLANT LIST

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PROFESSIONAL SEAL
TSOUVARAS HOLDINGS
 (Seal as per code)
 Project No./Code
 552



100 West 1st Ave., Suite 100
 Denver, CO 80202
 Phone: 303.733.1111
 Fax: 303.733.1112
 Website: www.dwruba.com

Sheet Revisions

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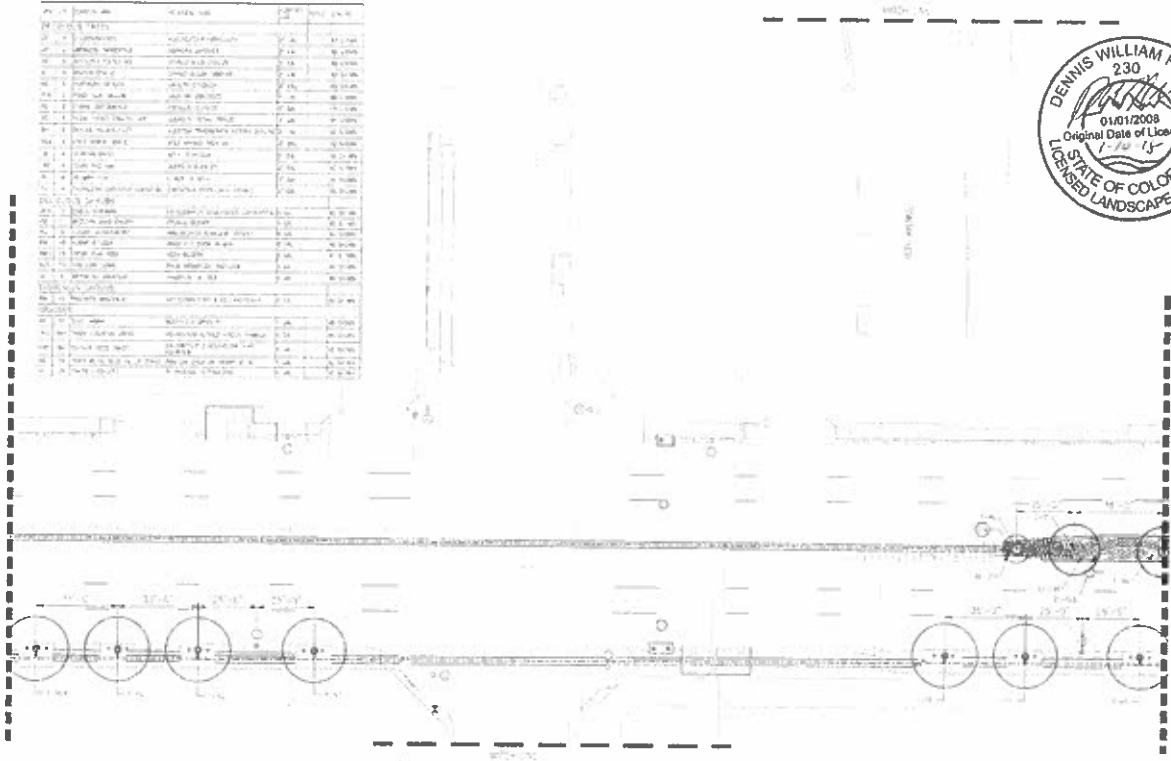


As Constructed
 FEDERAL Blvd RECONSTRUCTION
 LANDSCAPE PLANTING PLAN

FEDERAL Blvd RECONSTRUCTION - 5TH AVE TO HENRIARD PL
 LANDSCAPE PLANTING PLAN
 Project No./Code
 552

PLAN LIST

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MATERIAL NOTES

1. ASPHALT PAVING: ASPHALT 1 1/2" MIN. OVER 4" MIN. GRANULAR FILL.
2. CONCRETE: 4" MIN. THICKNESS WITH #4 REINFORCING BARS AT 18" ON CENTER.
3. GRAVEL: 1/4" TO 1/2" GRAVEL, 4" MIN. THICKNESS.
4. SAND: 20/40 MESH SAND, 4" MIN. THICKNESS.
5. CURB: 4" MIN. THICKNESS CONCRETE CURB WITH 1/2" RADIUS.
6. PAVEMENT: 1" MIN. THICKNESS POLYURETHANE PAINT.
7. TOP SOIL: 6" MIN. THICKNESS TOP SOIL.
8. MULCH: 2" MIN. THICKNESS MULCH.
9. IRON: 1/2" MIN. THICKNESS IRON.
10. BRICK: 4" MIN. THICKNESS BRICK.
11. BLOCK: 4" MIN. THICKNESS BLOCK.
12. STONE: 4" MIN. THICKNESS STONE.
13. GRANITE: 4" MIN. THICKNESS GRANITE.
14. MARBLE: 4" MIN. THICKNESS MARBLE.
15. SLATE: 4" MIN. THICKNESS SLATE.
16. QUARTZITE: 4" MIN. THICKNESS QUARTZITE.
17. SANDSTONE: 4" MIN. THICKNESS SANDSTONE.
18. LIMESTONE: 4" MIN. THICKNESS LIMESTONE.
19. GNEISS: 4" MIN. THICKNESS GNEISS.
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49. GNEISS: 4" MIN. THICKNESS GNEISS.
50. SCHIST: 4" MIN. THICKNESS SCHIST.

LA OUT NOTES

1. PLANTING: PLANTING TO BE DONE BY CONTRACTOR.
2. IRRIGATION: IRRIGATION SYSTEM TO BE INSTALLED BY CONTRACTOR.
3. MAINTENANCE: MAINTENANCE PLAN TO BE SUBMITTED TO THE CITY.
4. MATERIALS: MATERIALS TO BE APPROVED BY THE CITY.
5. CONSTRUCTION: CONSTRUCTION TO BE COMPLETED WITHIN 90 DAYS.
6. INSPECTION: INSPECTION TO BE CONDUCTED BY THE CITY.
7. AS-BUILT: AS-BUILT DRAWINGS TO BE SUBMITTED TO THE CITY.
8. GUARANTEE: GUARANTEE TO BE PROVIDED BY CONTRACTOR.
9. PERMITS: PERMITS TO BE OBTAINED BY CONTRACTOR.
10. UTILITIES: UTILITIES TO BE LOCATED AND MARKED BY CONTRACTOR.
11. EROSION CONTROL: EROSION CONTROL MEASURES TO BE INSTALLED BY CONTRACTOR.
12. TRAFFIC CONTROL: TRAFFIC CONTROL MEASURES TO BE INSTALLED BY CONTRACTOR.
13. SIGNAGE: SIGNAGE TO BE INSTALLED BY CONTRACTOR.
14. LIGHTING: LIGHTING TO BE INSTALLED BY CONTRACTOR.
15. SOUND BARRIER: SOUND BARRIER TO BE INSTALLED BY CONTRACTOR.
16. VISIBILITY TRIANGLE: VISIBILITY TRIANGLE TO BE MAINTAINED BY CONTRACTOR.
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49. SIGNAGE: SIGNAGE TO BE INSTALLED BY CONTRACTOR.
50. LIGHTING: LIGHTING TO BE INSTALLED BY CONTRACTOR.

MATERIAL NOTES

1. ASPHALT PAVING: ASPHALT 1 1/2" MIN. OVER 4" MIN. GRANULAR FILL.
2. CONCRETE: 4" MIN. THICKNESS WITH #4 REINFORCING BARS AT 18" ON CENTER.
3. GRAVEL: 1/4" TO 1/2" GRAVEL, 4" MIN. THICKNESS.
4. SAND: 20/40 MESH SAND, 4" MIN. THICKNESS.
5. CURB: 4" MIN. THICKNESS CONCRETE CURB WITH 1/2" RADIUS.
6. PAVEMENT: 1" MIN. THICKNESS POLYURETHANE PAINT.
7. TOP SOIL: 6" MIN. THICKNESS TOP SOIL.
8. MULCH: 2" MIN. THICKNESS MULCH.
9. IRON: 1/2" MIN. THICKNESS IRON.
10. BRICK: 4" MIN. THICKNESS BRICK.
11. BLOCK: 4" MIN. THICKNESS BLOCK.
12. STONE: 4" MIN. THICKNESS STONE.
13. GRANITE: 4" MIN. THICKNESS GRANITE.
14. MARBLE: 4" MIN. THICKNESS MARBLE.
15. SLATE: 4" MIN. THICKNESS SLATE.
16. QUARTZITE: 4" MIN. THICKNESS QUARTZITE.
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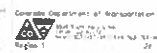
AN SUBMITTAL - JANUARY 2 2018

TSOUKARAS SIMONS HOLDERSHIP
 1000 17th Street, Suite 1000
 Denver, CO 80202
 Phone: 303.733.1111
 Fax: 303.733.1112
 Website: www.tsoukaras.com

Sheet Revisions



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As Constructed
 FEDERAL BLVD RECON - 5TH AVE TO HOWARD PL
 LANDSCAPE PLANTING PLAN
 Project No./Code
 2013-10-15-00000000
 535

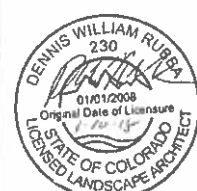
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 DRAWN BY: WJ
 CHECKED BY: WJ
 PROJECT NO.: 2013-10-15-00000000
 SHEET NO.: 535



PLANT LIST

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- MATERIAL NOTES**
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1200 Ketchikan Lane, Suite 100, Denver, CO 80202
 Phone: 303.733.1234
 Fax: 303.733.1235
 Website: www.dwr.com

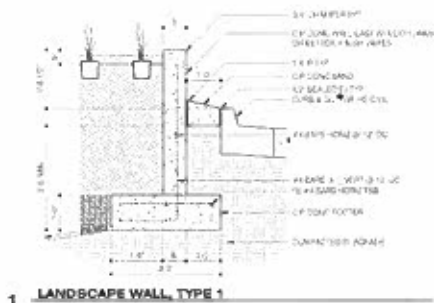
Sheet Revisions

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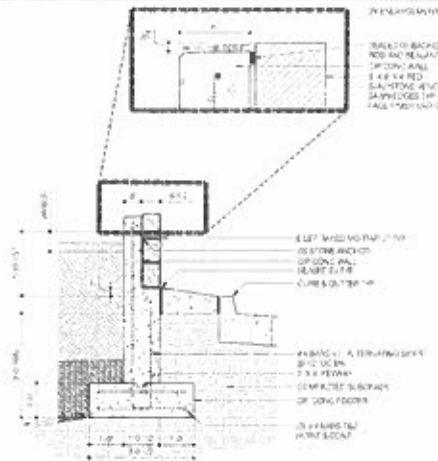


As Constructed
 FEDERAL BLVD RECORD 5TH AVE TO HOWARD PL
 LANDSCAPE PLANTING PLAN
 Project No./Code
 2011-01-000000000000
 537

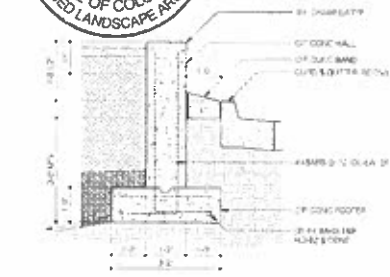
TSUKAMURA SHINJIUS HOLDINGS
 LANDSCAPE ARCHITECTS
 1200 Ketchikan Lane, Suite 100, Denver, CO 80202
 Phone: 303.733.1234
 Fax: 303.733.1235
 Website: www.dwr.com



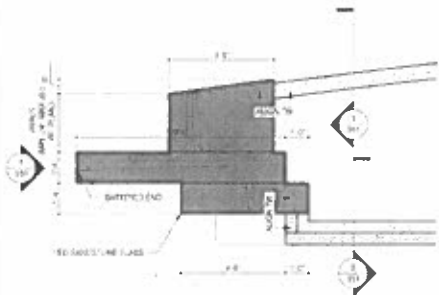
1 LANDSCAPE WALL, TYPE 1



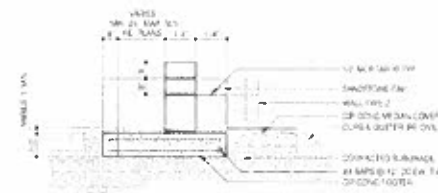
2 LANDSCAPE WALL, TYPE 2



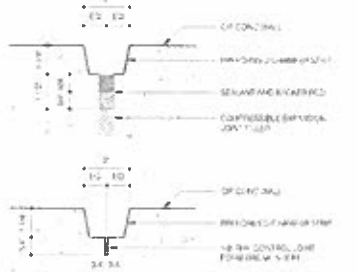
3 LANDSCAPE WALL, TYPE 3



4 TYP. MEDIAN END (PLAN)



5 MEDIAN END ELEVATION



6 CIP CONG WALL JOINTS

NOTE: SCALES FOR EACH DETAIL ARE RELATIVE TO FULL SIZE SHEETS (30" x 36")

For More Details See: 2018-0001-0001-0001
 Drawing No: 2018-0001-0001-0001
 Revision: 001

Sheet Revisions
 (Date) (User)



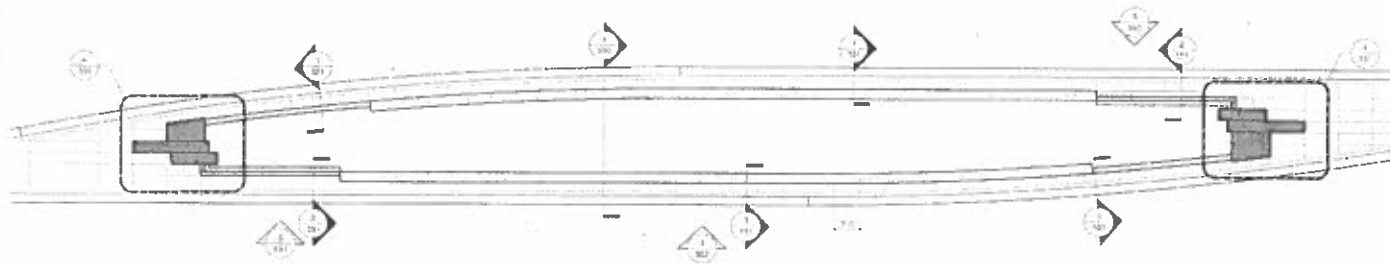
This is a design of a
 Department of Transportation
 Engineering Project
 2018-0001-0001-0001
 Date: 10/10/2018

As Constructed
 To: FEDERAL BLDG RECON- 5TH AVE TO HOWARD BL
 DEWIS- 5TH AND FLANTIC
 Project No./Code
 2018-0001-0001-0001
 2018-0001-0001-0001
 2018-0001-0001-0001

TSOLUBAS SHAWNS HOLDINGS
 LICENSED CONTRACTOR
 Project No./Code
 2018-0001-0001-0001
 2018-0001-0001-0001
 2018-0001-0001-0001



1 **MEDIAN PLANTER WALL ELEVATION**



2 **MEDIAN PLANTER WALL PLAN ENLARGEMENT**

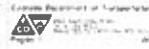
NOTE: SCALES FOR EACH DETAIL ARE RELATIVE TO FULL SIZE SHEETS (22" x 34")

Use: Register No. 2019-0127
 Drawing No. 2019-0127-01-01
 Revision Date: 1/1/2019

Sheet Revisions



Professional Seal of the State of Colorado
 License No. 230
 License Holder: DENNIS WILLIAM RUFFA

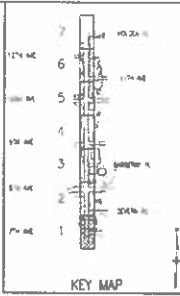


As Constructed

As Constructed
 No Changes
 Revised
 Date

FEDERAL BLVD RECON- 5TH AVE TO HOWARD PL
 RETAILER SITE AND PLANTING

Project No / Code
 2019-0127-01-01
 552



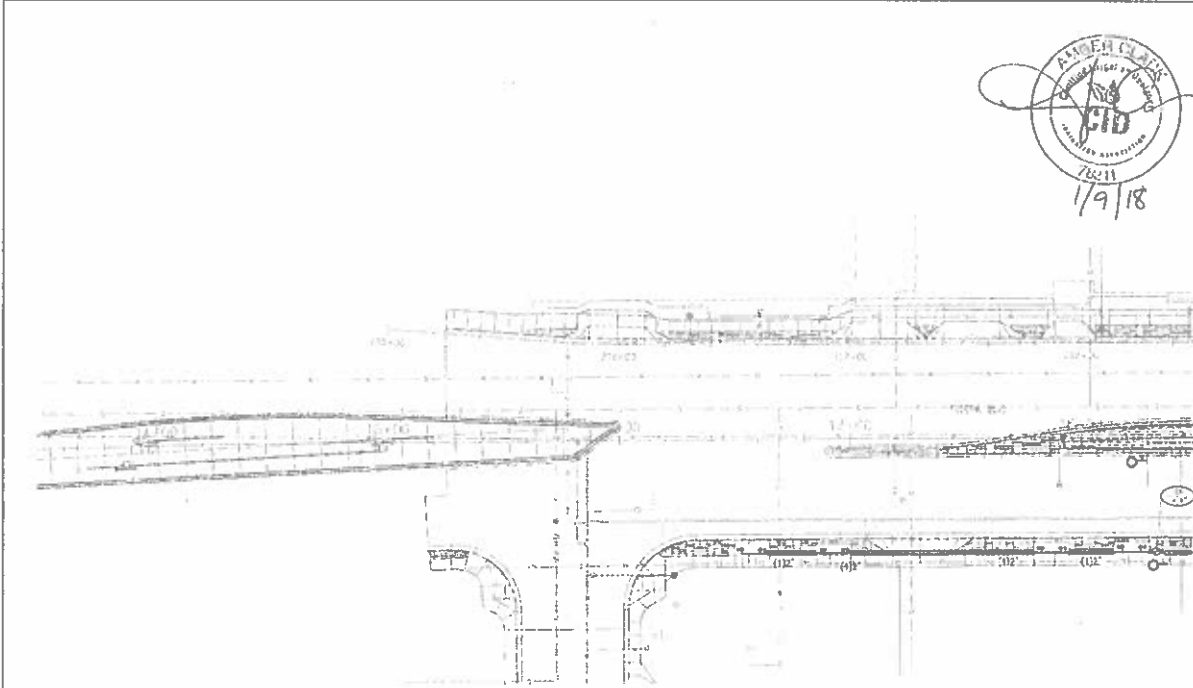
ALL UNGRADED IRRIGATION LATERAL PIPING SHALL BE 18" MINIMUM DIAMETER UNLESS OTHERWISE NOTED

CONTRACTOR SHALL MAINTAIN ALL CLEARANCES AS SHOWN IN CURRENT DENVER WATER ENGINEERING STANDARDS

CONTRACTOR COORDINATE WITH OTHER CONTRACTOR TO ROUTE IRRIGATION PIPING IN RELATION TO OTHER UTILITIES

PIPING BENDS ARE GRAPHICAL STRAIGHT LENGTHS OF PVC PIPE SHALL BE USED AT ALL POSSIBLE LOCATIONS. PIPE DEFLECTION SHALL NOT EXCEED 5 DEGREES, 22 DEGREE AND 45 DEGREE FITTINGS SHALL BE USED IF AREA REQUIRES FURTHER DEFLECTION.

SEE SHEET IRRIGATION 02



IRRIGATION LEGEND:

- ⊙ IRRIGATION METER
- ⊗ BACKFLOW PREVENTER
- ⊢ GATE VALVE
- ⊕ CHECK COMPLEX
- ⊙ HYDRIC METER
- ⊙ RUBBER
- ⊙ ELECTRIC CONTROLLER
- ⊙ RAIN SENSOR
- ⊙ CONTROL VALVE
- ⊙ GROUNDING LOCATION
- ⊙ HI-IMP SPRAY HEAD
- DRIP LINE BLOWOUT
- ⊖ SLEEVE LOCATION WITH QUANTITY AND SIZES (PVC)
- ⊖ SLEEVE LOCATION WITH QUANTITY AND SIZES (HDPE)
- 1-1/2" PVC MAINLINE PIPE AND SIZE
- 1" POLY LATERAL PIPE AND SIZE
- 1" S-B-SURFACE HEADER PIPE
- 1" SUB-SURFACE DRIP LINE

IRRIGATION SUBSET REFERENCE SHEETS:
 REFER TO SHEET "08" FOR IRRIGATION SCHEDULE
 REFER TO SHEETS "09" THROUGH "16" FOR DENVER WATER NOTES AND EXHIBITS
 REFER TO SHEETS "17" THROUGH "23" FOR IRRIGATION DETAILS
 REFER TO SHEET "24" FOR BID TABULATIONS

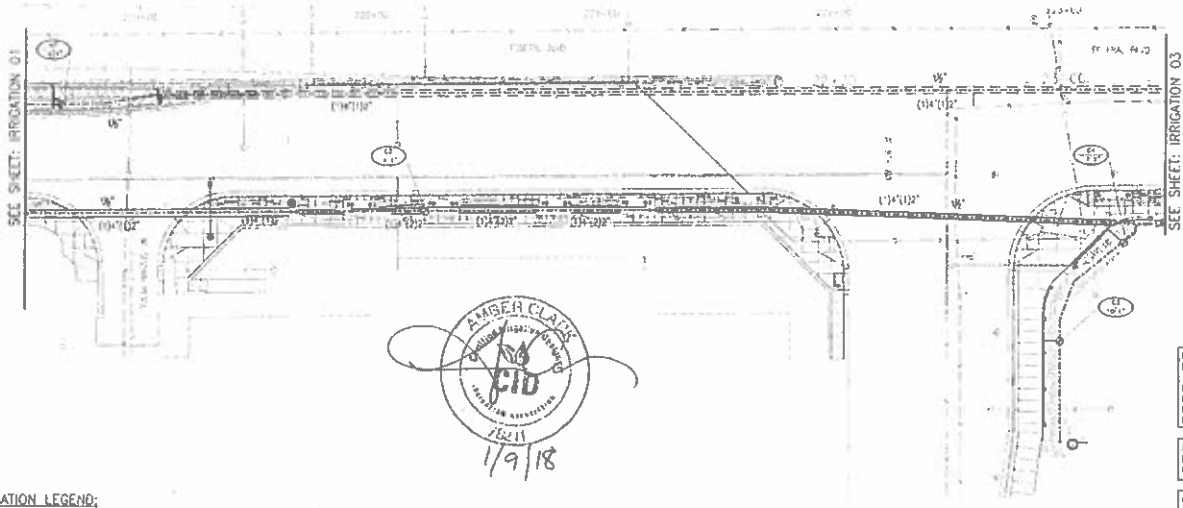
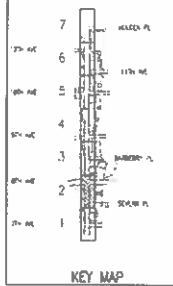


HydroSystems, Inc. **TSOUNOURAS ENGINEERS HOLDERSHIPS**

| Last Modification Date: 04-04-12 Drawing File Name: X-1102188-IRRIGATION Horizontal Scale: 1"=20' Vert. Scale: As Noted | <table border="1"> <thead> <tr> <th>Date</th> <th>Comments</th> <th>In</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> | Date | Comments | In | | | | | | | City and County of Denver Department of Public Works Engineer by Design 251 N. Dakota Street, Suite 505 Denver, CO 80233 | Colorado Department of Transportation 4000 South Colfax Avenue Denver, CO 80202 Region 1 | As Constructed | FEDERAL BLVD RECON- 5TH AVE TO HOWARD PL IRRIGATION PLAN | Project No./Code W-PP 2873-177 SA 19957 7100-PROJANSTR-0000364 Sheet Number 561 |
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| No Revisions Revised Voted | Designer: AMC Detailer: AMC Sheet Count: IRRIGATION Subsets: 21 of 24 | | | | | | | | | | | | | | |

AD SURIMTTAI - JANUARY 7, 2018

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 - ⊣ QUICK COUPLER
 - ⊙ HYDRANT
 - ⊙ BLEASER
 - ⊙ ELECTRIC CONTROLLER
 - ⊙ RAIN SENSOR
 - ⊙ CONTROL VALVE
 - ⊙ SPRINKLING INDICATOR
 - ⊙ POP SPRAY HEAD
 - ⊙ DRIP LINE BLOWOUT
 - (1)1/2" SILENCE LOCATION WITH QUANTITY AND SIZES (PVC)
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PIPING BENDS ARE GRAPHICAL STRAIGHT LENGTHS OF PVC PIPE SHALL BE USED AT ALL POSSIBLE LOCATIONS. PIPE DEFLECTION SHALL NOT EXCEED 3 DEGREES. 22 DEGREE AND 45 DEGREE FITTINGS SHALL BE USED IF AREA REDUCES FURTHER DEFLECTION.

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HydroSystems-KOL Inc. **TSUNOVARAS HOLDINGS** CREATIVE ENGINEERS

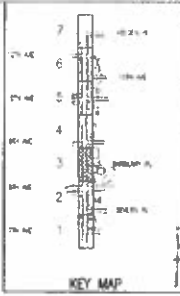
| Title: Main Irrigation Plan 04-04-12 V-2 AMC Drawing File Name: X-1102158-IRRIGATION Horizontal Scale: 1"=20' Vert. Scale: As Noted | <table border="1"> <thead> <tr> <th colspan="3">Sheet Revisions</th> </tr> <tr> <th>Date</th> <th>Description</th> <th>By</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> | Sheet Revisions | | | Date | Description | By | | | | City and County of Denver Department of Public Works Engineering Section 201 W. Colfax Street, Suite 200 Denver, CO 80202 | Colorado Department of Transportation 1500 Sherman Street, Suite 100 Denver, CO 80202 1-800-922-1887 | <table border="1"> <thead> <tr> <th colspan="2">As Constructed</th> </tr> </thead> <tbody> <tr> <td>No. Revisions</td> <td> </td> </tr> <tr> <td>Revised</td> <td> </td> </tr> <tr> <td>Void</td> <td> </td> </tr> </tbody> </table> | As Constructed | | No. Revisions | | Revised | | Void | | <table border="1"> <thead> <tr> <th colspan="2">FEDERAL BLVD RECON- 5TH AVE TO HOWARD PL</th> </tr> </thead> <tbody> <tr> <td>Designer:</td> <td>AMC Structure</td> </tr> <tr> <td>Checker:</td> <td>AMC Numbers</td> </tr> <tr> <td>Sheet Subset:</td> <td>IRRIGATION Subset Sheets 02 of 24</td> </tr> </tbody> </table> | FEDERAL BLVD RECON- 5TH AVE TO HOWARD PL | | Designer: | AMC Structure | Checker: | AMC Numbers | Sheet Subset: | IRRIGATION Subset Sheets 02 of 24 | <table border="1"> <thead> <tr> <th colspan="2">Project No./Code</th> </tr> </thead> <tbody> <tr> <td>V-PP 2011-172</td> <td>SA 12957</td> </tr> <tr> <td>2100-PROGNOSTIC-0003364</td> <td> </td> </tr> <tr> <td>Sheet Number</td> <td>562</td> </tr> </tbody> </table> | Project No./Code | | V-PP 2011-172 | SA 12957 | 2100-PROGNOSTIC-0003364 | | Sheet Number | 562 |
|---|---|-----------------|--|--|------|-------------|----|--|--|--|---|---|--|----------------|--|---------------|--|---------|--|------|--|--|--|--|-----------|---------------|----------|-------------|---------------|-----------------------------------|---|------------------|--|---------------|----------|-------------------------|--|--------------|-----|
| Sheet Revisions | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Date | Description | By | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| As Constructed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. Revisions | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Revised | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| FEDERAL BLVD RECON- 5TH AVE TO HOWARD PL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Designer: | AMC Structure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Checker: | AMC Numbers | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sheet Subset: | IRRIGATION Subset Sheets 02 of 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project No./Code | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| V-PP 2011-172 | SA 12957 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2100-PROGNOSTIC-0003364 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sheet Number | 562 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

AMC SUBMITTED - 10/11/17 9:24 AM



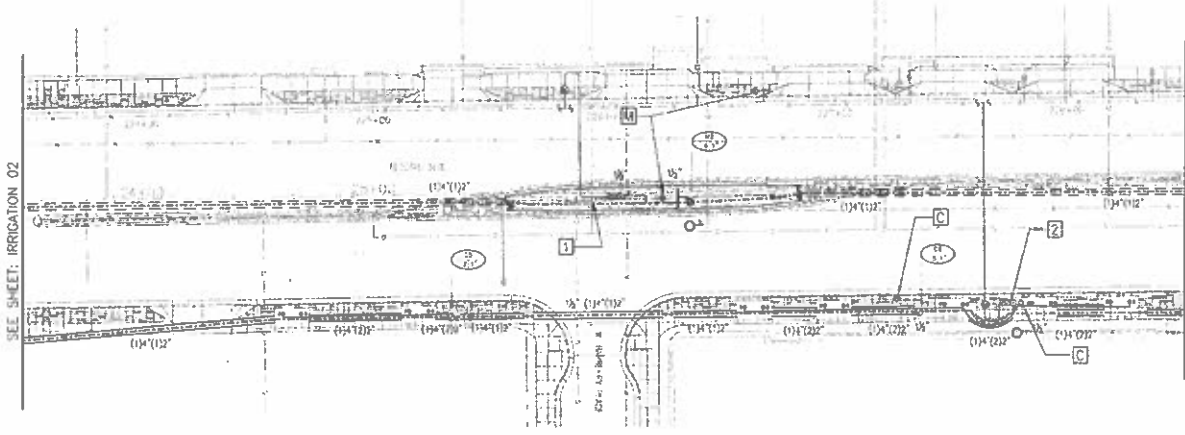
REFER TO SHEETS "09" THROUGH "16" FOR DETAILS AND CONSTRUCTION NOTES

- 1 POINT OF CONNECTION #1 - 1"
PEAK FLOW REQUIREMENT: 8 GPM
REQUIRED STATIC PRESSURE: 70 PSI MIN. AT THE BACKFLOW PREVENTER LOCATION
LEGAL DESCRIPTION: FEDERAL BLVD MEDIAN FROM W 7TH AVENUE TO W 10TH AVENUE
- M CONTROLLER LOCATION "M"
- 2 POINT OF CONNECTION #2 - 1"
PEAK FLOW REQUIREMENT: 10 GPM
REQUIRED STATIC PRESSURE: 75 PSI MIN. AT THE BACKFLOW PREVENTER LOCATION
LEGAL DESCRIPTION: FEDERAL BLVD EAST CROSSDE FROM W 7TH AVENUE TO W 12TH AVENUE
- C CONTROLLER LOCATION "C"



SEE SHEET: IRRIGATION 02

SEE SHEET: IRRIGATION 04



ALL UNLABELLED IRRIGATION LATERAL PIPING SHALL BE 1" MINIMUM DIAMETER UNLESS OTHERWISE NOTED

CONTRACTOR SHALL MAINTAIN ALL CLEARANCES AS DETAILED IN CURRENT DENVER WATER ENGINEERING STANDARDS

CONTRACTOR COORDINATE WITH PRIME CONTRACTOR TO ROUTE IRRIGATION PIPING IN RELATION TO OTHER UTILITIES

PIPING BENDS ARE GRAPHICAL STRAIGHT LENGTHS OF PVC PIPE SHALL BE USED AT ALL POSSIBLE LOCATIONS. PIPE DEFLECTION SHALL NOT EXCEED 5 DEGREES, 22 DEGREE AND 45 DEGREE FITTINGS SHALL BE USED IF AREA REQUIRES FURTHER DEFLECTION

IRRIGATION LEGEND:

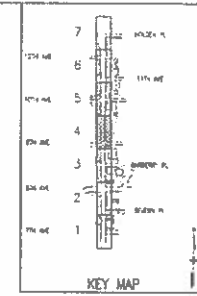
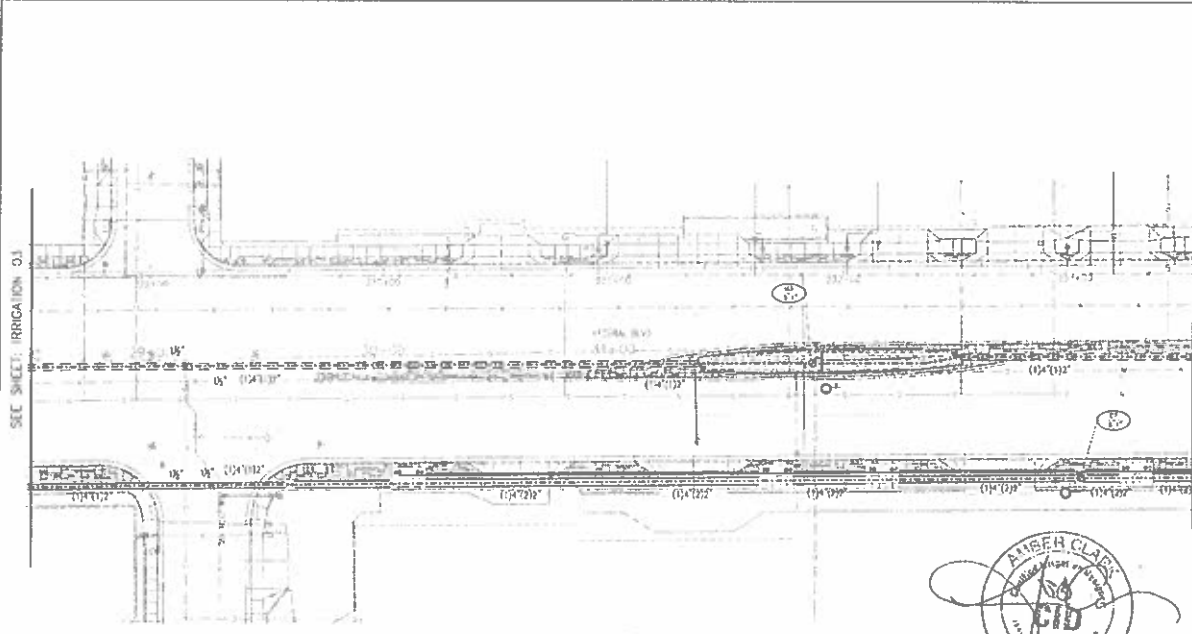
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|----------------------|-----------------------|---|
| ① IRRIGATION METER | ⊕ ELECTRIC CONTROLLER | (1.5") SLEEVE LOCATION WITH QUANTITY AND SIZES (PVC) |
| ⊘ BACKFLOW PREVENTER | ⊕ HAN SENSOR | (1.5") SLEEVE LOCATION WITH QUANTITY AND SIZES (HDPE) |
| ⊕ GATE VALVE | ⊕ CONTROL VALVE | 1-1/2" PVC MAINLINE PIPE AND SIZE |
| ⊕ GROUNDING LOCATION | ⊕ GROUNDING LOCATION | 1" POLY LATERAL PIPE AND SIZE |
| ⊕ HYDROMETER | ⊕ HP-POB SPRAY HEAD | 1" SLB-SURFACE HEADER PIPE |
| ⊕ BUBBLER | ⊕ DRP LINE BLOWOUT | 6" S.B.-SURFACE DRP LINE |

IRRIGATION SUBSET REFERENCE SHEETS:
 REFER TO SHEET "08" FOR IRRIGATION SCHEDULE
 REFER TO SHEETS "09" THROUGH "16" FOR DENVER WATER NOTES AND EXHIBITS
 REFER TO SHEETS "17" THROUGH "23" FOR IRRIGATION DETAILS
 REFER TO SHEET "24" FOR BID TABULATIONS



| Last Modification Date: 04-04-12 INC. AMC Drawing File Name: X-1102168-IRRIGATION Horizontal Scale: 1"=20' Vert. Scale: As Noted | Sheet Revisions <table border="1"> <thead> <tr> <th>Date</th> <th>Description</th> <th>By</th> <th>Appr.</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> | Date | Description | By | Appr. | | | | | City and County of Denver Department of Public Works Engineering Division 301 & Curtis, 3rd Floor Denver, CO 80202 | Colorado Department of Transportation Region 1 | As Constructed No Revisions Revised Void | FEDERAL BLVD REDCON-- 5TH AVE TO HOWARD PL IRRIGATION PLAN Designer: AMC Checker: AMC Sheet Subj: IRRIGATION Sheet Sheets: 03 of 24 | Project No./Code NRP 2813-172 SA 1957 2100 PROJ/STR-0000364 Sheet Number 563 |
|---|---|------|-------------|----|-------|--|--|--|--|--|---|---|---|--|
| Date | Description | By | Appr. | | | | | | | | | | | |
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APP SUBMITTED - JANUARY 9, 2018



ALL UNLABELED IRRIGATION LATERA PIPING SHALL BE 1" NUNYON DIAMETER UNLESS OTHERWISE NOTED.

CONTRACTOR SHALL MAINTAIN ALL CLEARANCES AS DETAILED IN CURRENT DENVER WATER ENGINEERING STANDARDS.

CONTRACTOR COORDINATE WITH PRIME CONTRACTOR TO ROUTE IRRIGATION PIPING IN RELATION TO OTHER UTILITIES.

PIPING SPANS ARE GRAPHICAL STRAIGHT LENGTHS OF PVC PIPE SHALL BE USED AT ALL POSSIBLE LOCATIONS. PIPE DEFLECTION SHALL NOT EXCEED 5 DEGREES, 22 DEGREE AND 45 DEGREE FITTINGS SHALL BE USED IF AREA REQUIRES FURTHER DEFLECTION.



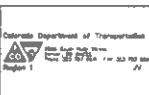
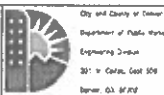
- IRRIGATION LEGEND:**
- ⊙ IRRIGATION METER
 - ⊠ BACKFLOW PREVENTER
 - ⊢ GATE VALVE
 - ⊣ CHECK VALVE
 - ⊙ HYDROMETER
 - ⊠ BURBER
 - ⊙ ELECTRIC CONTROLLER
 - ⊙ RAIN SENSOR
 - ⊙ CONTROL VALVE
 - ⊙ CHANGING LOCATION
 - ⊙ POP SPRAY HEAD
 - ⊢ DRIP LINE BLOWOUT
 - ⊠ SLEEVE LOCATION WITH QUANTITY AND SIZES (PVC)
 - ⊠ SLEEVE LOCATION WITH QUANTITY AND SIZES (HDPE)
 - 1.5" PVC MAINLINE PIPE AND SIZE
 - 1" POLY LATERAL PIPE AND SIZE
 - 1" SUB-SURFACE HEADER PIPE
 - SUB-SURFACE DRIP LINE

IRRIGATION SUBSET REFERENCE SHEETS:
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1st Modification Date 04-04-12 BY: AMC
 Drawing File Name: X-1102198-IRRIGATION
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 Vertical Scale As Noted

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| Date | Comments |
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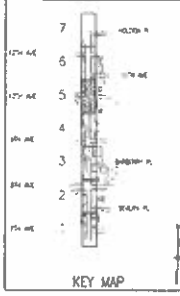
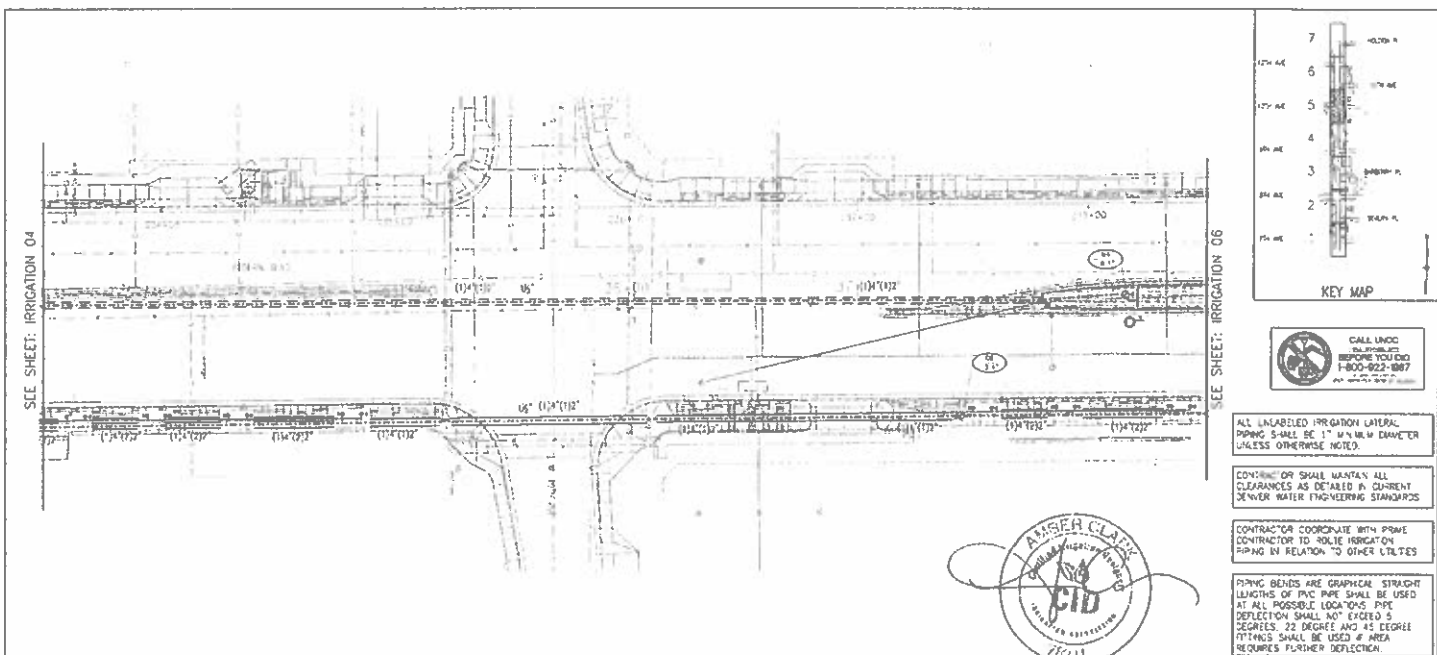


As Constructed
 No Revisions
 Revised
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FEDERAL BLVD RECON - 5TH AVE TO HOWARD PL
 IRRIGATION PLAN
 Designer: ABC Structure
 Designer: ABC numbers
 Sheet Size: IRRIGATION Subset Sheets 04 of 24

Project No./Code
 NPP 2873-172
 SA 19237
 2100-PROJ/STR-0000364
 Sheet Number 564

814 SURVEYED BY: JASUN BOYD 2018



ALL UNLABELED IRRIGATION LATERAL PIPING SHALL BE 1" M.V.M. DIAMETER UNLESS OTHERWISE NOTED.

CONTRACTOR SHALL MAINTAIN ALL CLEARANCES AS DETAILED IN CURRENT DENVER WATER ENGINEERING STANDARDS.

CONTRACTOR COORDINATE WITH PWSM CONTRACTOR TO ROUTE IRRIGATION PIPING IN RELATION TO OTHER UTILITIES.

P.V.C. BENDS ARE GRAPHICAL STRAIGHT LENGTHS OF P.V.C. PIPE SHALL BE USED AT ALL POSSIBLE LOCATIONS. PIPE DEFLECTION SHALL NOT EXCEED 5 DEGREES, 22 DEGREE AND 45 DEGREE FITTINGS SHALL BE USED IF AREA REQUIRES FURTHER DEFLECTION.

IRRIGATION LEGEND:

- ⊙ IRRIGATION METER
- ⊠ BACKFLOW PREVENTER
- ⊣ GATE VALVE
- ⊙ QUICK COUPLER
- ⊙ HYDROMETER
- ⊙ BUBBLER
- ⊙ ELECTRIC CONTROLLER
- ⊙ RAIN SENSOR
- ⊙ CONTROL VALVE
- ⊙ GROUNDING LOCATION
- ⊙ HI-POD SPRAY HEAD
- ▶ DRIP LINE BLOWOUT
- ① SLEEVE LOCATION WITH QUANTITY AND SIZE (PVC)
- ② SLEEVE LOCATION WITH QUANTITY AND SIZE (HDPE)
- 1" PVC MAINLINE PIPE AND SIZE
- 1" POLY LATERAL PIPE AND SIZE
- SUB-SURFACE HEADER PIPE
- SUB-SURFACE DRIP LINE

IRRIGATION SUBSET REFERENCE SHEETS:
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Last Modification Date: 04-08-12
 Drawing Title: X-1102158-IRRIGATION
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 Vertical Scale: As Noted

| Sheet Revisions | |
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| Date | Comment |
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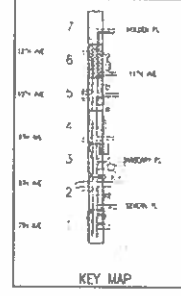
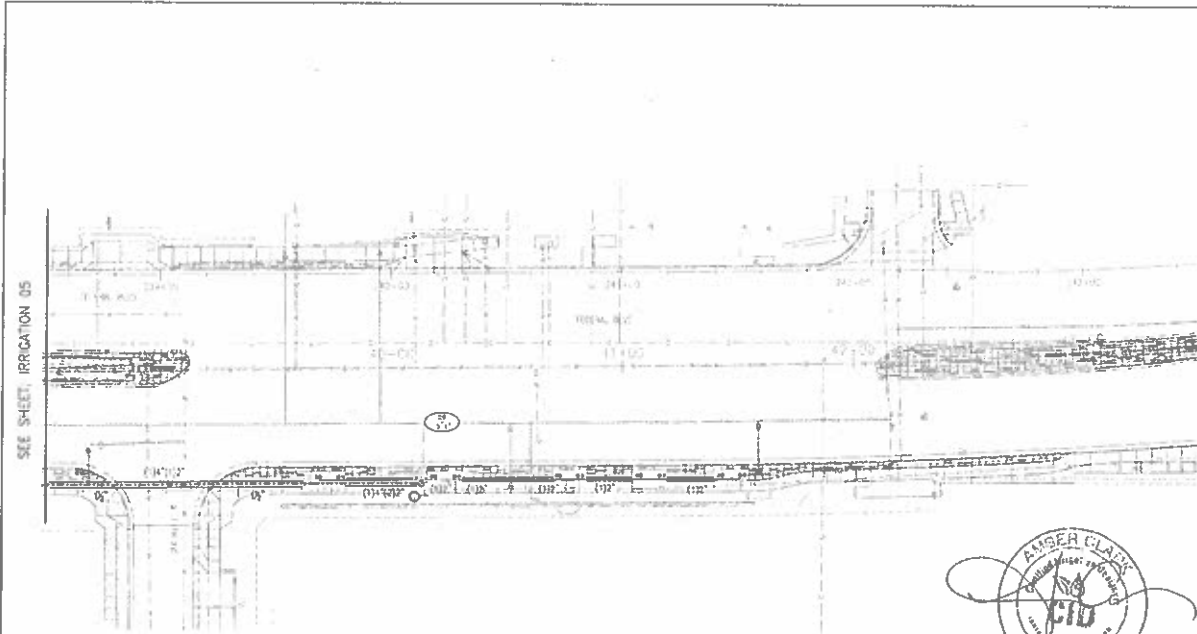
City and County of Denver
 Department of Public Works
 Engineering Division
 221 W. Colfax, 80202
 Denver, CO 80202

As Constructed
 No Revisions
 Revisions
 No-C

FEDERAL BLVD RECON - 5TH AVE TO HOWARD PL
 IRRIGATION PLAN
 Designer: AMC Structure
 Checker: AMC Structures
 Sheet Subset: IRRIGATION Subset Sheets: 05 of 24

Project No./Code
 NRP 1813-172
 SA 15257
 2:00 PROJANTR-0200364
 Sheet Number: 565

ADDITIONAL INFORMATION



CALL UNCO
BEFORE YOU BID
1-800-922-8887

ALL UNLABELED IRRIGATION LATERAL PIPING SHALL BE 1" MINIMUM DIAMETER UNLESS OTHERWISE NOTED.

CONTRACTOR SHALL MAINTAIN ALL CLEARANCE AS DETAIL IN CURB/BIKEWAY WATER ENGINEERING STANDARDS

CONTRACTOR COORDINATE WITH PRIME CONTRACTOR TO ROUTE IRRIGATION PIPING IN RELATION TO OTHER UTILITIES

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AMBER CLARK
1/9/18

IRRIGATION LEGEND:

- ⊙ IRRIGATION METER
- ⊙ ELECTRIC CONTROLLER
- ⊙ BACKFLOW PREVENTER
- ⊙ RAIN SENSOR
- ⊙ GATE VALVE
- ⊙ CONTROL VALVE
- ⊙ QUICK COUPLER
- ⊙ GROUNDING LOCATION
- ⊙ HYDROMETER
- ⊙ HI-POD SPRAY HEAD
- ⊙ BUSSELER
- ⊙ DAP LND BLOW OFF
- ⊙ SLEEVE LOCATION WITH QUANTITY AND SIZES (PVC)
- ⊙ SLEEVE LOCATION WITH QUANTITY AND SIZES (DIP)
- 1-1/2" PVC MAINLINE PIPE AND SIZE
- 1" POLY LATERAL PIPE AND SIZE
- SUB-SURFACE HEADER PIPE
- SUB-SURFACE DRIP LINE

IRRIGATION SUBSET REFERENCE SHEETS:
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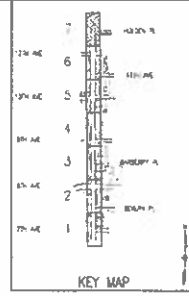
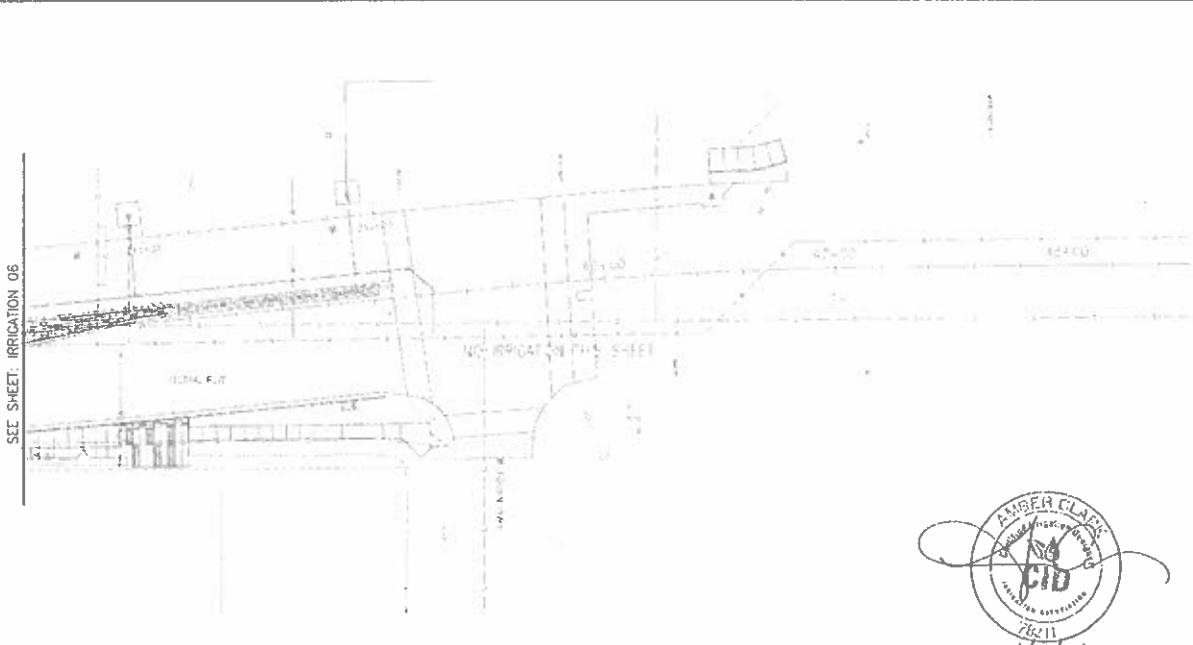


HydroSystems-KM, Inc.
TSUNIMARAS HOLDINGS

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| Local Modification Date: 04-04-12 Drawing File Name: X-1102188-IRRIGATOR Horizontal Scale: 1"=20' Vert. Scale: As Noted | Sheet Revisions Date: _____ Comments: _____ R.C.: _____ | City and County of Denver Department of Public Works Engineering Division 261 W. Colfax, Dept 506 Denver, CO 80202 | Colorado Department of Transportation 1500 Highways Blvd Denver, CO 80202 (303) 769-3000 | As Constructed No. Revisions: _____ Perused: _____ Y06 | FEDERAL BLVD RECON- 5TH AVE TO HOWARD PL IRRIGATION PLAN Designer: _____ Checker: _____ Sheet Sched: IRRIGATOR, Subed Sheets 06 of 24 | Project No./Code 5799 1815-178 SA 1951 2100-PROJ.MSTR 0000164 Sheet Number: 566 |
|--|---|--|---|--|---|--|

AD SUBMITTAL - JANUARY 9 2018

SEE SHEET: IRRIGATION 06



ALL UNLABELED IRRIGATION LATERAL PIPING SHALL BE 1" MINIMUM DIAMETER UNLESS OTHERWISE NOTED.

CONTRACTOR SHALL VERIFY ALL CLEARANCES AS DETAILED BY CURRENT DENVER WATER ENGINEERING STANDARDS.

CONTRACTOR COORDINATE WITH OTHER CONTRACTORS TO ROUTE IRRIGATION PIPING IN RELATION TO OTHER UTILITIES.

PIPING BENDS ARE GRAPHICAL. STRAIGHT LENGTHS OF PVC PIPE SHALL BE FIELD AT ALL POSSIBLE LOCATIONS. PIPE DEFLECTION SHALL NOT EXCEED 5 DEGREES, 22 DEGREE AND 45 DEGREE FITTINGS SHALL BE USED IF AREA REQUIRES FURTHER DEFLECTION.



IRRIGATION LEGEND:

- ⊙ IRRIGATION METER
- ⊠ BACKFLOW PREVENTER
- ⊢ GATE VALVE
- ⊣ GATE COUPLER
- ⊕ HYDROMETER
- ⊙ BUBBLER
- ⊕ ELECTRIC CONTROLLER
- ⊕ RAIN SENSOR
- ⊕ CONTROL VALVE
- ⊕ GROUNDING LOCATION
- ⊕ HI-POP SPRINKLER HEAD
- ⊕ DROP LINE ELBOWOUT
- (1.5") SLEEVE LOCATION WITH QUANTITY AND SIZES (PVC)
- (1.5") SLEEVE LOCATION WITH QUANTITY AND SIZES (HDPE)
- 1.5" PVC MAIN LATERAL PIPE AND SIZE
- 1" POLY LATERAL PIPE AND SIZE
- 1" SUB-SURFACE HEADER PIPE
- 1" SUB-SURFACE END LINE

IRRIGATION SUBSET REFERENCE SHEETS:
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HydroSystems-USA, Inc. and TSKNORRAS HOLDINGS ASSOCIATES INCORPORATED

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| Last Modification Date: 04-04-12 Drawing File Name: X-1102188-IRRIGATION Horizontal Scale: 1"=20' Vertical Scale: As Noted | Sheet Revisions Date: _____ Description: _____ Int: _____ | City and County of Denver Department of Public Works Engineering Division 201 W. Colfax, Suite 205 Denver, CO 80202 | Colorado Department of Transportation Region 1 1000 Poudre Blvd Fort Collins, CO 80501 | As Constructed No Revisions: Revised: No S: | FEDERAL BLVD RECON - 5TH AVE TO HOWARD PL IRRIGATION PLAN Designer: AMC Structures Detailer: AMC Structures Sheet Subset: IRRIGATION Subset Sheets 07 of 24 | Project No./Code 14-PP 2873-172 2A 19957 2100-PROJMS18-0000264 Sheet Number: 567 |
|---|---|---|---|---|---|--|

AD SURIMATTAY - JANUARY 7, 2018

GENERAL IRRIGATION CONSTRUCTION NOTES:

- PLANNING AND BASE INFORMATION** - ALL BASE AND PLANNING INFORMATION HAS BEEN PROVIDED BY STUDIO WASTE. THE CONTRACTOR IS RESPONSIBLE TO NOTIFY HYDROSISTEMSA OF ANY DISCREPANCIES BETWEEN THE UTILITY OR PLANNING PLANS AND THE IRRIGATION PLAN. IF CONTRACTOR FAILS TO NOTIFY HYDROSISTEMSA AND MAKES CHANGES TO THE IRRIGATION SYSTEM DESIGN, THE ASSUMES ALL COSTS AND LIABILITIES ASSOCIATED WITH THOSE FIELD CHANGES. REFER TO SPECIFICATIONS FOR ADDITIONAL PROJECT REQUIREMENTS.
- SYSTEM PRESSURE** - HYDROSISTEMSA HAS CONTACTED THE LOCAL WATER DISTRICT THAT SERVES THIS SITE AND THEY HAVE BEEN TOLD THAT THE STATIC WATER PRESSURE IN THIS AREA SHOULD BE 100 PSI MAX. THE CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY PRESSURE PRIOR TO COMMENCING ANY CONSTRUCTION AND NOTIFY HYDROSISTEMSA OF ANY VARIANCE FROM THE STATED PRESSURE IMMEDIATELY. WRITTEN DOCUMENTATION OF PRESSURE TEST AND RESULTS SHALL BE PROVIDED TO HYDROSISTEMSA AT CONSTRUCTION ONSET. IF CONTRACTOR FAILS TO FIELD VERIFY PRESSURE AND/OR NOTIFY HYDROSISTEMSA OF ANY VARIATIONS FROM THE PRESSURE, THEN HE ASSUMES ALL CONSTRUCTION AND ENGINEERING COSTS ASSOCIATED WITH SYSTEM MODIFICATIONS REQUIRED TO ACCOMMODATE ACTUAL SITE PRESSURE. THIS SYSTEM HAS BEEN DESIGNED FOR A REQUIRED STATIC PRESSURE OF 85 PSI MINIMUM. REFER TO POINT OF CONNECTION NOTES.
- IRRIGATION SYSTEM OPERATION INTENT** - THIS IRRIGATION SYSTEM HAS BEEN DESIGNED TO IRRIGATE THE ESTABLISHED LANDSCAPE WITHIN A THREE NIGHT PER WEEK, SIX HOUR PER NIGHT WATERING WINDOW. ESTABLISHMENT WATERING WILL REQUIRE UP TO THREE AS MUCH FREQUENCIES FOR A FOUR TO SIX WEEK PERIOD. THE DESIGN IS BASED ON THE FOLLOWING PROJECTED WEEKLY APPLICATION RATES AFTER ESTABLISHMENT. THESE FIGURES ARE BASED ON A 30-YEAR AVERAGE WEATHER DATA AND WILL NEED TO BE ADJUSTED DUE TO SEASONAL CHANGES AND WEATHER CONDITIONS ABOVE AND BELOW THE AVERAGE VALUES UTILIZED.
- FOUNDATION INSTALLATION** - IT IS THE INTENT OF THIS DESIGN THAT ALL IRRIGATION EQUIPMENT BE INSTALLED WITHIN PROPERTY LINES AND WITHIN LANDSCAPED AREAS. ANY EQUIPMENT OTHER THAN VALVE BOXES OR SLEEVING THAT CONTAINS PIPES OR LINES SHOWN OUTSIDE OF THESE LIMITS IS SHOWN IN THAT LOCATION FOR GRAPHICAL CLARITY ONLY. ALL VALVE BOXES SHALL BE INSTALLED A MINIMUM OF 2'-0" FROM EDGE OF ANY PAVED SURFACES UNLESS SPECIFICALLY INDICATED ON PLANS. BOXES INSTALLED IN OPEN TYPED AREAS SHALL BE KEPT TO EDGES AND STAGED FOR REMOVAL. ALONG HIGH TRAFFIC AREAS, ALL VALVE BOXES SHALL BE PLACED A MINIMUM OF 3'-0" FROM THE CENTERLINE OF ANY DRIVEWAY SHALL. ALL VALVE BOXES WITHIN PARKING SHALL BE FOR IS RATED BOXES FOR HEAVY DUTY NON-DEBRAM TRAFFIC. BOX LID COLOR SHALL MATCH ADJACENT MATERIALS. I.E. GREEN A TURF, TAN IN WOOD MULCH, GRAY IN STONE MULCH. PURPLE FOR RECLAIMED WATER SYSTEMS (IF REQUIRED). REFER TO LANDSCAPE PLANS FOR MATERIALS, COLORS AND TYPES. ALL BOXES SHALL BE INSTALLED TO BE FLUSH WITH GRADE AND IN AN OBSCURE MANNER.
- MANUAL DRAIN VALVES** - CONTRACTOR TO INSTALL ONE MANUAL DRAIN VALVE ON PRESSURE SUPPLY LINE DIRECT DOWNSTREAM OF BACKFLOW PREVENTER AND AT ALL LOW POINTS AND DEAD ENDS OF PRESSURE SUPPLY PIPING TO INSURE COMPLETE DRAINAGE OF SYSTEM. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THESE LOCATIONS AND INSTALLATION LOCATIONS SHALL BE NOTED ON AS-BUILTS.
- DRIP IRRIGATION** - REFER TO IRRIGATION DETAIL SHEET FOR DRIP EMITTER TUBING INSTALLATION AND PLACEMENT.
- UNLABELLED PIPING** - ALL UNLABELLED LATERAL PIPING SHALL BE 1" MINIMUM UNLESS OTHERWISE NOTED.
- SLEEVING** - ALL SLEEVING UNDER PAVED SURFACES SHOWN ON PLANS IS BY CONTRACTOR UNLESS OTHERWISE NOTED. SLEEVING SHALL BE INSTALLED IN THE SIZE AND QUANTITIES SHOWN ON PLANS OR BASED ON THE SCHEDULE BELOW. WHERE SLEEVES ARE SHOWN BUT NOT LABELLED, FOLLOW THE SCHEDULE BELOW. ALL MANHOLE COVERS, WIRES AND DRIP LINES UNDER PAVED SURFACES ARE TO BE INSTALLED IN SLEEVING. ALL MANHOLE SLEEVING LOCATIONS TO INCLUDE A SEPARATE WIRE SLEEVE.

| | |
|---------------------------------|-----------------------------------|
| 1/2" (1) SIZE SLEEVING QUANTITY | REQUIRED SLEEVE SIZE & JOINTS (1) |
| 1/2" - 1" PIPING | 2" PVC (1) |
| 1/2" - 2" PIPING | 4" PVC (1) |
| CONDUIT CABLE | 2" PVC (1) |
- 2 WIRE SYSTEM NOTES** - CONTRACTOR SHALL INSTALL ALL TWO-WIRE COMPONENTS PER MANUFACTURER'S RECOMMENDATIONS AND STANDARDS.
 - CONTRACTOR SHALL USE ONLY MANUFACTURED 2-WIRE DECODER CABLE (SEE SCHEDULE FOR SPECIFIC 2-WIRE CABLE).
 - USE DIFFERENT COLOR 2-WIRE DECODER CABLE FOR EACH CONTROLLER (BLUE FOR 0 AND BLACK FOR 1).
 - ONLY USE SINGLE STATION DECODERS (SEE SCHEDULE FOR SPECIFIC MODEL).
 - ONLY USE SENSOR DECODER FOR FLOW SENSOR (SEE SCHEDULE FOR SPECIFIC MODEL) IF INDICATED ON PLANS.
 - 100% OF 2-WIRE DECODER CABLE INTO ALL VALVE BOXES (WITH DECODERS AND SPLICERS) FOR MAINTENANCE.
 - USE ONLY 3M D99-6 WATERPROOF CONNECTORS ON ALL WIRE SPLICES AND ALL WIRE SPLICES ARE TO BE MADE WITHIN A VALVE BOX WITH CONTROL VALVES OR A SEPARATE 1" ROUND VALVE BOX FOR WIRE SPLICES.
 - INSTALL 5/8" PROTECTOR RODS OR PLATES 6" LF. FROM VALVES, DECODERS, AND COMMUNICATION WIRE WHERE POSSIBLE. IF LANDSCAPE AREA IS HANDICAPPED, INSTALL ONLY PLATES FOR GROUNDING AND INSTALL IN PARALLEL TO WIRE A MINIMUM OF 4" FROM WIRE PATH.
 - GROUND ALL DECODERS AND DECODER WIRE A MINIMUM OF EVERY 500' OF WIRE OR EVERY 8TH DECODER AND AT ALL ENDS OF 2-WIRE DECODER CABLE RUN. LOOP EXTRA 10' OF 2-WIRE DECODER CABLE INTO A VALVE BOX AT PHASING LINES FOR FUTURE CONNECTION (IF INDICATED ON PLANS).
- ADJUSTMENT** - CONTRACTOR SHALL FINE TUNE/ADJUST THE IRRIGATION SYSTEM TO REDUCE/AVOID OVERSPRAY DROPS AND SURFACES BY ADJUSTING NOZZLE DIRECTION AND NOZZLE RADII.
- PLANS AND SPECIFICATIONS** - CONTRACTOR RESPONSIBLE TO ENSURE WORK CONFORMS TO PLANS AND SPECIFICATIONS. AT ONSET OF CONSTRUCTION, VERIFY PLANS AND CURRENT WORKING REQUIRED BY CITY. CONTRACTOR SHALL CONSTRUCT ONLY THE CITY STAMPED PLANS. REVISIONS TO CITY STAMPED PLANS SHALL COME ONLY TO CITY FIELD (CHANGE PROCEDURES AND DOCUMENTATION).
- CITY DETAILS** - HYDROSISTEMSA WILL BE RESPONSIBLE FOR THE IRRIGATION DESIGN IDEAL DETAILS SHOWN AS "OPEN" IN THE SCHEDULE ARE STANDARD DETAILS (DESIGNED AND SPECIFIED BY THE APPLICABLE GOVERNING AUTHORITY). DENIAL PERMITS & INSURANCE. HYDROSISTEMSA DID NOT DESIGN AND SPECIFY THESE DETAILS. HYDROSISTEMSA IS NOT RESPONSIBLE AND ACCEPTS NO RESPONSIBILITY FOR THE SELECTION AND SPECIFICATION OF THIS DETAIL, AND HYDROSISTEMSA MAKES NO REPRESENTATIONS WITH REGARD TO THIS DETAIL.
- WATER BUDGETS AND PROJECTIONS** - HYDROSISTEMSA HAS BASED THE IRRIGATION DESIGN AND THE ASSOCIATED PROJECTED WATER USE UPON SUCH FACTORS AS CITY OR WATER DISTRICT IMPOSED REQUIREMENTS, PUBLISHED PLANT SPECIES WATER NEEDS, SELECTED IRRIGATION METHODS/TECHNIQUES AS REPORTED BY HOBBY/AMATEUR TESTING FACILITIES, HISTORICAL WEATHER DATA FOR THE PROJECT LOCATION, AND PROPER MAINTENANCE PROCEDURES. HYDROSISTEMSA IS NOT RESPONSIBLE, AND ACCEPTS NO RESPONSIBILITY FOR THE ACTUAL WATER USAGE VARIATION THAT IS A RESULT OF FIELD MODIFICATIONS TO THE SYSTEM NOT WATCHING CONSTRUCTION DOCUMENTS, IMPROPER MAINTENANCE, RUST DUE TO SYSTEM DAMAGE OR VANDALISM, OR WEATHER CONDITIONS THAT DEVIATE FROM PUBLISHED 30 YEAR HISTORICAL AVERAGES.



| MEDIAN IRRIGATION SCHEDULE | | | | |
|----------------------------|--------------|---|--|-----------------------|
| SYMBOL | MANUFACTURER | MODEL NO. | DESCRIPTION | DETAIL NO. |
| 10-0 | RAIN BIRD | 10-2 SH-PPS SERIES HEAD WITH BAKED PRECISION NOZZLES | 10-PPS (SH-PP) | DRP 0 |
| 11 | RAIN BIRD | 10-2 SCRTS | SCRTS | DRP 1 |
| 12 | RAIN BIRD | REB-PPS-6 SERIES | LETTER CONTROL VALVE | DRP 1 & 2 & 3 & 4 |
| 13 | BUDGET | DRALC010 | CLICK COUPLING VALVE | DRP 5 |
| 14 | RAIN | GENERAL SERIES WOOD HANDLE BRASS 1/2" OR 3/4" AND 1/2" WIRE CONTROL 1 1/2" 1 1/2" 1 1/2" 1 1/2" STEEL, ALUMINUM ENDOURER "SUNSHINE" SERIES 1/2" AND 3/4" FLOW SENSOR EQUIPMENT WITH 1/2" PROFILE SCHEDULE | ELECTRIC CONTROLLER | DRP 20 & 4 |
| 15 | WATERS | 1/4" OR 1/2" WIRELESS | RAIN SHUT OFF DEVICE | DRP 21 |
| 16 | WATERS | 3/4" | SHOCK/STOP PREVENTER | DRP 22 & 23 |
| 17/18 | CLANDORPH | 25-1 | BACKFLOW PREVENTER ENCLOSURE | 4 |
| 19/20 | WATERS | 1/2" 2000 | WALLA GAIN VALVE | DRP 13 |
| 21 | WATERS | 1/4" | EXT. VALVE | DRP 14 |
| 22 | WATERS | 1/4" 500 1/2" NORMALLY OPEN FIELD SWITCH - 1/4" 1/2" | HYDROMETER | DRP 22 |
| 23 | | CLASS 200 80' | PVC MANHOLE | DRP 1 |
| 24 | | 1000 100' | POLE LATERAL | DRP 1 |
| 25 | | 1000 100' | PVC HEAD & PIPE | DRP 1 |
| 26 | WATERS | 1/4" 2000-12 1/2" 1/2" 1/2" 1/2" | SUBSTRATE DRAINAGE | B. E. 2, 4 & 6 |
| 27 | RAIN BIRD | 102-100-PPS-020 | SUBSTRATE GRP VALVE (ALUMINUM) | DRP 2 & 3 & 4 & 5 & 6 |
| 28 | | CLASS 200 | PPV LINE BUSH-OUT | 4 |
| 29 | | 5/4" | PVC SLEEVING | DRP 2 |
| 30 | | 5/4" | HOPE SLEEVING | DRP 2 |
| 31 | | 5/4" | WATER METER | DRP 10 |
| 32 | WATERS | 1/2" 2000 | 2-PIN GOLF | 1 & 2 & 3 |
| 33 | WATERS | 1/2" 2000-12 | WALLS OF LOGS | 1 & 2 |
| 34 | WATERS | 58-10-4 | CONCRETE IRRIGATION WITH-DRINKING HOSE | 1 |
| 35 | | 5/4" | WIRE SPLICE | DRP 10 |
| 36 | WATERS | 1" - 1/2" 2000 | STOP & DRINK VALVE | DRP 20 & 23 |



IRRIGATION SUBSET REFERENCE SHEETS:
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 REFER TO SHEETS "09" THROUGH "18" FOR DENVER WATER NOTES AND EXHIBITS
 REFER TO SHEETS "17" THROUGH "23" FOR IRRIGATION DETAILS
 REFER TO SHEET "24" FOR BIO TABULATIONS

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| Last Modification: Date 04-04-12 By: AMC Drawing File Name: X-1102108-IRRGATION Horizontal Scale: 1"=20' Vert. Scale: As Shown | Sheet Revisions Date: _____ Comments: _____ Date: _____ Comments: _____ Date: _____ Comments: _____ | City and County of Denver Department of Public Works Engineering Division 301 - 4 (Date: Oct. 2005) Denver, CO 80202 | Division: Department of Transportation Project: _____ Location: _____ Date: _____ | As Constructed No Revisions Revised Held | FEDERAL BLVD RECON - 5TH AVE TO HOWARD PL IRRIGATION SCHEDULE AND NOTES Designer: AMC Structure Detector: AMC Water Sheet Subset: IRRIGATION Subset Sheets 08 of 24 | Project No./Code 15-00 2673-172 SA 10052 2011-P83,APC 9-000-344 Sheet Number: 568 |
|--|---|--|--|--|---|---|

POINT OF CONNECTION #1 - 1"

PEAK FLOW REQUIREMENT: 10 GPM
 REQUIRED STATIC PRESSURE: 85 PSI MIN. AT THE BACKFLOW PREVENTER LOCATION
 LEGAL DESCRIPTION: FEDERAL BLVD MEDIAN FROM W 7TH AVENUE TO W 11TH AVENUE
 CONTRACTOR SHALL LOCATE 1" COPPER DOWNSTREAM OF EXISTING METER PIT AT THE BACKFLOW PREVENTER LOCATION (TAP TO BE INSTALLED BY DENVER WATER SERVICE LINE CURB STOP, METER PIT AND COPPER TO MEDIAN BACKFLOW PREVENTER INSTALLED FOR IRRIGATION USE BY CURE WITH THE FOLLOWING REQUIREMENTS: IMMEDIATELY BACK OF CURB, INSTALL ONE CURB STOP VALVE AND STOP BOX AND ONE 1" METER PIT, EXTEND 1" TYPE K SOFT COPPER AT 54" MINIMUM DEPTH 5' PAST METER PIT PRIOR TO ANY BENDS, UPSIZING VALVES OR FITTINGS AND ROUTE TO BACKFLOW PREVENTER LOCATION AS SHOWN, INSTALL ONE 1" STOP AND WASTE VALVE, AND ONE 1" REDUCED PRESSURE BACKFLOW PREVENTER WITH PROTECTIVE ENCLOSURE. IRRIGATION CONTRACTOR SHALL CONNECT AND CONVERT TO 1" PVC MAINLINE, INSTALL ONE 1-1/2" NORMALLY OPEN HYDROMETER, ONE MANUAL DRAIN VALVE, ONE QUICK COUPLING VALVE, AND EXTEND 1-1/2" CLOROCB PVC MAINLINE AS SHOWN (KIND ONE (1) PAGE 717)-D-A SIGNAL CABLE FROM FLOW SENSOR TO THE DATA RETRIEVAL BOARD LOCATED AT CONTROLLER THAT SERVES THE LAP CONTRACTOR SHALL CALIBRATE AND VERIFY THE ACCURACY OF THE HYDROMETER. IRRIGATION CONTRACTOR SHALL COORDINATE WITH DENVER WATER TO INSTALL ONE 1" METER WITH A METER PIT WORK SHALL CONFORM TO LOCAL CODE. FEES AND PERMITS ASSOCIATED WITH WORK ARE TO BE OBTAINED AND PAID FOR BY CONTRACTOR. ANY CHANGE TO BACKFLOW PREVENTER LOCATION SHALL BE REVIEWED AND APPROVED BY CONSULTANT PRIOR TO INSTALLATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE PRESSURE AT THE BACKFLOW PREVENTER IS AS STATED. IF THE PRESSURE VARIES FROM THE EXPECTED PRESSURE, THE CONTRACTOR SHALL CONTACT HYDROSYSTEMS/DCR. THE CONTRACTOR SHALL PROVIDE DENVER PARKS STAFF WRITTEN DOCUMENTATION OF THE STATIC WATER PRESSURE AT THE BACKFLOW PREVENTER.

POINT OF CONNECTION #2 - 1"

PEAK FLOW REQUIREMENT: 10 GPM
 REQUIRED STATIC PRESSURE: 90 PSI MIN. AT THE BACKFLOW PREVENTER LOCATION
 LEGAL DESCRIPTION: FEDERAL BLVD EAST CURBSIDE FROM W 7TH AVENUE TO W 12TH AVENUE
 CONTRACTOR SHALL LOCATE 1" COPPER DOWNSTREAM OF EXISTING METER PIT AT THE BACKFLOW PREVENTER LOCATION (TAP TO BE INSTALLED BY DENVER WATER SERVICE LINE CURB STOP, METER PIT AND COPPER TO CURB INSTALLED FOR IRRIGATION USE BY CURE WITH THE FOLLOWING REQUIREMENTS: IMMEDIATELY BACK OF CURB, INSTALL ONE CURB STOP VALVE AND STOP BOX, AND ONE 1" METER PIT, EXTEND 1" TYPE K SOFT COPPER AT 54" MINIMUM DEPTH 5' PAST METER PIT PRIOR TO ANY BENDS, UPSIZING VALVES OR FITTINGS AND ROUTE TO BACKFLOW PREVENTER LOCATION AS SHOWN, INSTALL ONE 1" STOP AND WASTE VALVE, AND ONE 1" REDUCED PRESSURE BACKFLOW PREVENTER WITH PROTECTIVE ENCLOSURE. IRRIGATION CONTRACTOR SHALL CONNECT AND CONVERT TO 1" PVC MAINLINE, INSTALL ONE 1-1/2" NORMALLY OPEN HYDROMETER, ONE MANUAL DRAIN VALVE, ONE QUICK COUPLING VALVE, AND EXTEND 1-1/2" CLOROCB PVC MAINLINE AS SHOWN. EXTEND ONE (1) PAGE 717)-D-A SIGNAL CABLE FROM FLOW SENSOR TO THE DATA RETRIEVAL BOARD LOCATED AT CONTROLLER THAT SERVES THE LAP CONTRACTOR SHALL CALIBRATE AND VERIFY THE ACCURACY OF THE HYDROMETER. IRRIGATION CONTRACTOR SHALL COORDINATE WITH DENVER WATER TO INSTALL ONE 1" METER WITH A METER PIT WORK SHALL CONFORM TO LOCAL CODE. FEES AND PERMITS ASSOCIATED WITH WORK ARE TO BE OBTAINED AND PAID FOR BY CONTRACTOR. ANY CHANGE TO BACKFLOW PREVENTER LOCATION SHALL BE REVIEWED AND APPROVED BY CONSULTANT PRIOR TO INSTALLATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE PRESSURE AT THE BACKFLOW PREVENTER IS AS STATED. IF THE PRESSURE VARIES FROM THE EXPECTED PRESSURE, THE CONTRACTOR SHALL CONTACT HYDROSYSTEMS/DCR. THE CONTRACTOR SHALL PROVIDE DENVER PARKS STAFF WRITTEN DOCUMENTATION OF THE STATIC WATER PRESSURE AT THE BACKFLOW PREVENTER.

CONTROLLER LOCATION "C" (CURBSIDE) AND "M" (MEDIAN)

CONTRACTOR SHALL INSTALL NEW TONG SERIAL 12 STATION FIELD UNIT AND ENCLOSURE (MODEL NUMBER PER SCHEDULE) AT EACH LOCATION AS SHOWN. CONTROLLER SHALL BE READY TO GO. 20 VOLT POWER IS AVAILABLE WITHIN 150 FT. OF CONTROLLER LOCATION. ELECTRICAL POWER CONNECTION TO CONTROLLER AND ENCLOSURE SHALL BE APPROVED BY DENVER WATER. CONTRACTOR SHALL LOCATE (1) PAGE 717)-D-A SIGNAL CABLE FROM EACH CONTROLLER AND CONNECT WIRES TO THE APPROPRIATE SENSOR INPUT PORTS. FEES AND PERMITS ASSOCIATED WITH WORK ARE TO BE OBTAINED AND PAID BY CONTRACTOR. FINAL CONTROLLER LOCATION SHALL BE APPROVED BY DENVER PARKS STAFF PRIOR TO INSTALLATION. CONTROLLER LOCATION CAN RECEIVE DENVER PARKS RADIO SIGNAL FROM BATHAM PARK. MOUNT ONE WIRELESS RAIN CLK DEVICE ON LIGHT POLE SHOWN ON EAST CURBSIDE AT APPROPRIATE LOCATIONS SHOWN WHERE THERE IS 20 FT. OF CLEARANCE FROM ANY OVERHANG OR OBSTRUCTION FEATURE. INSTALL RAIN SENSOR RECEIVER IN CONTROLLER ENCLOSURE. FINAL RAIN SENSOR AND CONTROLLER LOCATIONS SHALL BE APPROVED BY DENVER PARKS STAFF PRIOR TO INSTALLATION.

IRRIGATION SUBSET REFERENCE SHEETS:
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 REFER TO SHEETS "09" THROUGH "16" FOR DENVER WATER NOTES AND EXHIBITS
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DENVER WATER

IRRIGATION/LANDSCAPE PLAN ACCEPTANCE CHECKLIST

Include a copy of this completed checklist with your final submittal only. Plans will not be accepted for review if all items are not included with your final submittal. If your project is in a Master Meter or Road & Bid district, please contact the district directly for instructions.

Enter the 6-digit Denver Water Project No.:

- Irrigation/Landscape Submittal Requirements:**
- Transmittal letter with contact person's name, phone number and email address
 - Full-sized set of irrigation and landscape multi-sheet DWG's
 - Water Budget
 - Executed Plan Acceptance Checklist
 - Plan Review Fee. If paying by check, the check must be received the same day the plan is submitted. If paying by credit card, please provide the payee's information: name/address/phone number, and email address

- Irrigation Plans must include the following:**
- Cover Sheet with Utility Map
 - General Construction Notes
 - Water meter size and type of connecting to a newly installed water main or tap, reference the Denver Water assigned project and tap number approving the work
 - Cross Street. Reference with drawings to all Points of Connection (POCs)
 - All POCs by size, service line material, meter, pit and backflow assembly
 - Type of backflow assembly (RP or DC) size, make and model
 - Civil requirements and legal description of service area on both the water budget and all the POC on the Irrigation and Landscape Plans
 - POC elevations at the POC (only required if project requires multiple POCs)
 - Section Township and Range

\$450 Plan Review Fee (required on all submittals)

Your signature represents your agreement that you have reviewed, reviewed and agreed to include the information referenced above. If you do not provide all of the information listed above, your submittal will be rejected until all of the required information is submitted.

Signature: *[Signature]* Date: 5/21/2017
 Revised May 19, 2017



| Last Modification Date: 04-04-12 Drawing File Name: 1-1102189-IRRIGATION Revision: 1 Vertical Scale: As Noted | Sheet Revisions <table border="1"> <thead> <tr> <th>Date</th> <th>Comments</th> <th>By</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> | Date | Comments | By | | | | City and County of Denver Department of Public Works Engineering Division 211 S. Colfax, Suite 500 Denver, CO 80202 | Colorado Department of Transportation 1525 North 20th Street Denver, CO 80202 | As Constructed No Revisions Revised N/A | FEDERAL BLVD RECON - 5TH AVE TO HOWARD PL CONSTRUCTION NOTES AND CHECKLIST Designer: AMC Checker: AMC Sheet Subset: IRRIGATION Subset Sheets 06 of 24 | Project No./Code 4-PP 2615 127 SA 15952 2511-PROJNSTR-0000364 Sheet Number: 569 |
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| Date | Comments | By | | | | | | | | | | |
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AN SHIRIMTTAL - JANUARY 2, 2018

General Construction and Water Notes:

Main Emission Notes:

- All materials and workmanship shall be in accordance with Denver Water's Engineering Standards, Materials Specifications, and Drawings. All main installation system modifications will be approved and inspected by Denver Water.
- Contractors shall maintain a copy of the current Engineering Standards on-site at all times during construction. See the chart below for a quick reference to the frequently used material specifications.

Material Specification Quick Reference:

| Material Specification | Description |
|------------------------|--|
| MS 01 | DI Pipe |
| MS 02 | PVC Pipe |
| MS 03 | Fittings |
| MS 04, MS 05 | Valves |
| MS 06 | Tagging Wakes |
| MS 07 | Tagging Sleeves |
| MS 12 | Valve Boxes (Recycled water system valve boxes shall be fitted with triangular covers cast with the words "Denver Water Recycled" and shall be coated with a fusion bonded epoxy coating, part number 2677U in color.) |
| MS 13 | Dry Barrel Fire Hydrants |
| MS 14 | Brass and Bronze Goods |
| MS 20 | Resistant Device |

- Trace w/c: 12 gpd/cf shall be installed on all non-metallic water mains.
- For all pipe installations, the depth of cover over the pipe measured from official street grade to the top of the pipe shall be a minimum of 4'-1/2 feet and shall be known as the cover over the pipe. If it fluctuates after crossing structures and where specifically approved by Denver Water, divisions from 4'-1/2 feet of cover will be permitted. The cover over the pipe shall be a minimum of 4'-1/2 feet and a maximum of 10 feet. Refer to Standard Drawing Sheet 16.
- Any changes in alignment and grade shall be submitted by Denver Water and shall be accompanied by the installation of additional fittings. The deflection of joints is permitted only when installing pipe on horizontal or in-line curves.
- The Contractor shall equal all valve boxes and fire hydrants to the final finished grade.
- All bands, nuts, tie hydrants, blow-offs and plugs at dead-end mains shall be protected from thrust with mechanical restraint and concrete thrust blocks in accordance with Denver Water's Engineering Standard Drawings Sheet 20 and 22.
- All valves shall be located on property line if possible, except for tagging lines where an isolation valve shall be placed at the tapping line. Other valve locations may be required as shown on the plans.
- When it is necessary to lower or move water lines at other drive and other utility crossings, a minimum clearance of 1.5 feet shall be maintained between the outside of the pipe.
- The Contractor shall have a signed copy of the approved water plans in his/her possession at all times.
- Only one joint of connection will be allowed until the testing of the new installation is complete.
- Newly installed water mains and fittings shall be hydrostatically tested in accordance with Denver Water Engineering Standard Section B 20.
- Prior to the installation of water mains, road construction must have progressed to at least the sub-grade stage. Sub-grade is defined as an elevation of no more than 7 inches below the finished street grade.
- The Contractor is responsible for:
 - Notifying customers who may be affected by a water outage during construction.
 - Obtaining, at the Contractor's expense, applicable licenses, permits, bonds, etc. that are required for the main installation or open modification.
 - Contacting Denver Water's Construction Engineering personnel for the Pre-construction Meeting and Inspection, 303-428-8038, at least 48 hours prior to beginning construction. In the event of an emergency in Denver or the Total Service Area after working hours, call Denver Water's Afterhours Dispatchers, 333-834-3460. In a Master Water District, please contact the representative of the District in which the Project is taking place.
 - Paying all additional charges for inspection outside normal work hours.

NOTE: Be advised that not all valves in our system may be operable. On such occasions, if they become necessary to block up an additional block for the shut out, if that occurs, make additional notifications to customers with the minimum 24 hours advance notice. When valve maintenance is required a delay of several days should be expected.

Tap and Meter Notes (for Denver, Total Service, and Road and Ball Areas only. In Master Water Districts, please refer to the Specifications for that District):

- Before any taps are made from mains, applications for the taps must be received and approved by the District and by Denver Water.
- Denver Water will make all taps that are 2 inches and smaller.
- Individual service line P.V.V.s are required when area pressure exceeds 80 psi.
- Service and Meters:
 - The Contractor shall hold on-site pre-construction conference with the Meter Inspector for all taps, service lines, and meters larger than one inch, and for projects involving more than one tap and service. To schedule a pre-construction conference call 303-428-8143.
 - A copy of these plans with Denver Water's approval sticker must be present on-site at the time the tap is made and at the time the meter is installed.
 - Prior to the tap being made, the service address shall be posted, along with the cut valve, meter type and meter pit/vault installed. Upon tap installation, the contractor may request the Meter Inspector after the first pour of concrete has occurred. The service address shall remain posted until the meter setting passes inspection.
 - A Self-Inspection report will be required prior to the completion of the Certificate of Occupancy. Contact Conservation at 303-428-5670 for information and to schedule a self-inspection.
 - Meters cannot be set or inspected, or service activated until the requirements for backflow prevention have been completed. Contact the Backflow Prevention Program personnel at 303-428-5940 for further information.
 - Allow at least 3 working days advance notice when scheduling taps. To schedule a tap call 303-428-8701, for questions related to meter inspection call 303-428-6145. Service activation will take place when the service and meter setting pass approval.
 - All meter and Automatic Meter Reading service locations shall be approved by a Denver Water meter inspector, a copy in Meter Meter Distributor Database.
 - Meter pits and vaults must be set flush with the final grade of the landscape including proper depth of soil amendment. If final grading has not been completed at the time of meter inspection, the District will be required to raise or lower the meter pit/vault when final grade is established. Adjustment of the pit may require adjustment of the meter setting with the pit.
 - Meter setting valves and service lines from the main to the Backflow Prevention Assembly, present prior to 5 feet after the meter vault, must meet all applicable Engineering Standards in effect at the time of installation. If necessary to comply with current standards, modifications may be required with the details on these plans.
 - All present or future fences or walls are permitted between the Right Of Way (ROW) or easement and the meter setting. There shall be no permanent obstructions within 5 feet of the outside wall of the meter pit or vault.

IRRIGATION SUBSET REFERENCE SHEETS:

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| Last Modification Date: 04-04-12 Drawing File Name: X-1102168-IRRIGATION Horizontal Scale: 1"=20' | Inl: AMC Vert. Scale: As Noted | Sheet Revisions <table border="1"> <thead> <tr> <th>Rev.</th> <th>Description</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Correct</td> <td></td> </tr> </tbody> </table> | Rev. | Description | Date | 1 | Correct | | City and County of Denver Department of Public Works Engineering Division 200 W. Colfax, Suite 500 Denver, CO 80202 | Colorado Department of Transportation Region 1 1400 W. 10th Ave., Suite 100 Denver, CO 80202 | As Constructed No Permits: Revises: Void: | FEDERAL BLVD RECON - 5TH AVE TO HOWARD PL DENVER WATER NOTES Designer: AMC Structural Checker: AMC Numbers Steel Elevation: IRRIGATION Subset Sheets 10 of 24 | Project No./Code 1909-2018-171 SA 19092 2018-PROJ-STR-000104 Sheet Number: 570 |
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| Rev. | Description | Date | | | | | | | | | | | |
| 1 | Correct | | | | | | | | | | | | |

Revision Date: November 14, 2013

Revision Date: November 14, 2013

Revision Date: November 14, 2013

- Tap relocation (from what is shown on these plans) may be necessary to avoid paved areas or other obstructions that are not shown on the plans. Details from these plans and standards must be approved prior to construction.
- Inside the City of Denver into the Total Service and Read & Bid Distributor Districts, meters must be furnished with Automatic Meter Reading (AMR) devices as specified by Denver Water. The AMR devices will be installed by Denver Water at the time of service activation.
- Meter pits and vaults shall have appropriate lids based on the location and the application. Contact Meter Inspection at 303-733-4145 to determine the correct lid configuration.
- The Contractor shall provide a specially AMR device mounting box when required. Install a double gang 4x4 electrical junction box, mount as directed. 7 feet above grade. Install Belden #16421 cable in 3/4-inch or larger conduit from the meter to the mounting box. Two boxes and two cables are required for compound meters.
- Inside the City of Denver, all main family overflows with a single tap, service line, and meter are required to sub-meter each individual unit (Sec. 401.3.2 of Denver modifications to the International Plumbing Code, Ordinance Number 576, Series of 2004). Call the City and County of Denver Plumbing Inspector for information at 720-665-2125.
- Inside the City of Denver, all service lines must be installed to avoid existing or proposed wet lines. Contact the City and County of Denver a Forester at 720-613-0647 for information.
- Existing services must be metered as it lines until the tap has been cut at the main and approved by Denver Water.

Cross-Connection Control Requirements:

The licenses listed below shall be in conformance with Denver Water's Engineering Standards, Chapter 5.09, Cross-Connection Control and Backflow Prevention. Backflow prevention assemblies are required to be installed on the following water service lines:

- Commercial Properties: Real estate zoned for business and/or industrial use that consist of six or more units with a domestic fire line or dedicated water irrigation service tap (as defined as such for cross-connection purposes).
- Domestic, dedicated irrigation, fire or water recycled water service lines.
- Multi-Family Residential: A dwelling with two to five units with a domestic, fire, water or dedicated water service tap (defined as such for cross-connection purposes).
 - Fire means over three stories high, three 30 in. or fire protection system, common boiler, auxiliary water, swimming pool and irrigation systems.
- Single Family Residents: A single unit dwelling (defined as such for cross-connection purposes).
 - Dual Water Supply Agreement.

- All backflow prevention assemblies shall be a model manufactured in compliance with AWWA C510 and C511 and shall have met the specifications by the University of California Foundation for Cross-Connection Control and Hydraulic Research.

Foundation for Cross-Connection Control and Hydraulic Research
 School of Engineering MC-2511
 University of Southern California
 P.O. Box 77902
 Los Angeles, CA 90097
 Foundation Office (866) 545-6340
<http://www.usc.edu/efccr/>

- The licensee is required to have a certified American Backflow Prevention Association (ABPA) or American Society of Sanitary Engineering (ASSE) tester inspect and test the existing and/or newly installed commercial backflow prevention assemblies on the dedicated water service lines (domestic, dedicated irrigation, fire, and recycled water) installation and annually thereafter.
- The ABPA or ASSE certified backflow tester is responsible to meet the requirements listed in the Engineering Standards, Chapter 5.09. If the ABPA or ASSE certified backflow tester is testing a backflow prevention assembly installed on a recycled water service line, the tester is required to have a dedicated recycled water test gauge.
- Within 48 hours of Denver Water testing the meter and turning on the water service, the ABPA or ASSE certified backflow tester is required to submit the commercial backflow assembly test report(s) to the Cross-Connection Control Office.
 - Phone: 303-638-8069
 - Fax: 303-794-8325
 - E-mail: CrossConnectionControl@denverwater.org
 - Denver Office: 8100 W. Quincy Avenue, Denver, CO 80235
- There shall be no unprotected takeoffs from the service line ahead of any meter or ahead of a backflow prevention assembly located at the point of delivery to the customer's water system.
- No branch lines or taps are allowed on dedicated commercial irrigation water service lines or recycled water service lines for domestic (potable) uses (e.g. drinking fountains, water play features, swimming pool, toilet facilities, etc.):
 - Between the irrigation tap and the meter.
 - Between the meter and the backflow prevention assembly.
 - Downstream from the backflow prevention assembly.

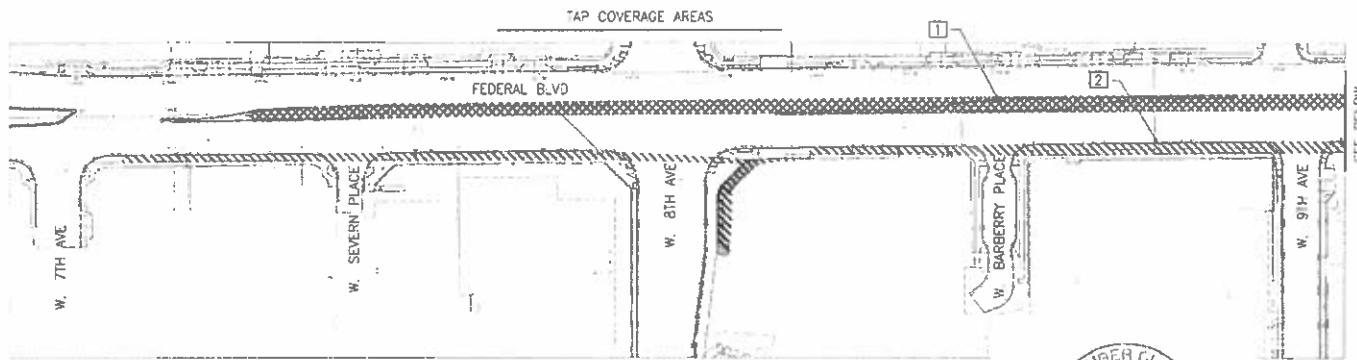
- Commercial Irrigation Water Service Line Taps:
 - Comply with the Cross-Connection Control requirements listed above (A-F).
 - Require an approved USC FCC-CWR Reduced Pressure Principle (RPP) backflow prevention assembly to be installed 5 feet downstream from the meter pit as an above ground installation before any connections. Refer to the manufacturer's installation instructions for height and installation requirements.
 - If the backflow prevention assembly cannot be installed 5 feet downstream from the meter pit, include a service letter justifying the need for relocation.
- Recycled Water Service Line Taps:
 - Backflow prevention assemblies are required to be installed on commercial recycled water service line taps.
 - If chemical injection is used downstream from the meter:
 - If pumps are used downstream from the meter.
 - If the existing or proposed system poses a risk to the integrity of the recycled water system.
 - Comply with the Cross-Connection Control requirements listed above (A-F).
 - Require an approved USC FCC-CWR Reduced Pressure Principle (RPP) backflow prevention assembly to be installed 5 feet downstream from the meter pit as an above ground installation before any connections. Refer to the manufacturer's installation instructions for height and installation requirements.
 - If the backflow prevention assembly is not installed 5 feet downstream from the meter pit, include a service letter justifying the need for relocation.
 - Backflow prevention assemblies installed on recycled water service lines shall be tested as "Recycled Water".
 - Recycled or Reuse Water (drinking water, ponds, well, etc.) used for irrigation on the premises:
 - Comply with the Cross-Connection Control requirements listed above (A-F).
 - Require an approved USC FCC-CWR backflow prevention assembly (conforming to be installed 5 feet downstream from the meter pit on any potable water service line).
 - The backflow assembly type is determined by the Degree of Hazard downstream from the meter, refer to Denver Water's Engineering Standards, 5.09, Degree of Hazard, or contact Cross-Connection Control at 303-528-5340.
 - It is at the sole discretion of Denver Water's Cross-Connection Control section to approve a variance request related to a proposed backflow prevention assembly installation.

IRRIGATION SUBSET REFERENCE SHEETS:
 REFER TO SHEET "08" FOR IRRIGATION SCHEDULE
 REFER TO SHEETS "09" THROUGH "16" FOR DENVER WATER NOTES AND EXHIBITS
 REFER TO SHEETS "17" THROUGH "23" FOR IRRIGATION DETAILS
 REFER TO SHEET "24" FOR BID TABULATIONS

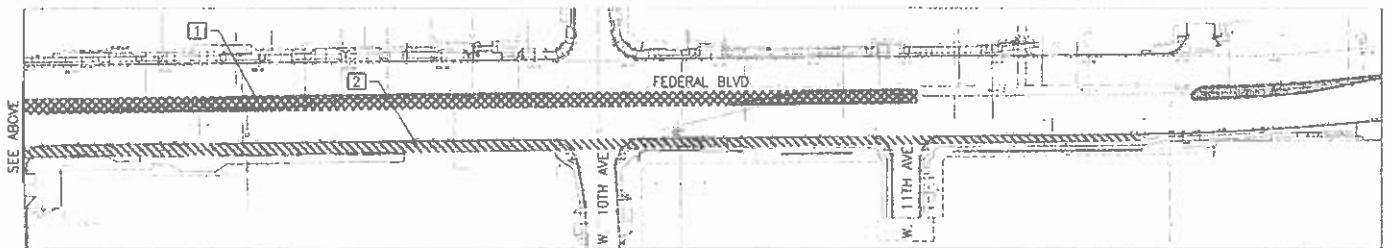


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APP. SUBMITTED JANUARY 9, 2018



IRRIGATION SUBSET REFERENCE SHEETS:
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 AND EXHIBITS
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Hydrobrylls-KD, Inc. TSKOUNRAS HOLDINGS CHIEF ENGINEERS

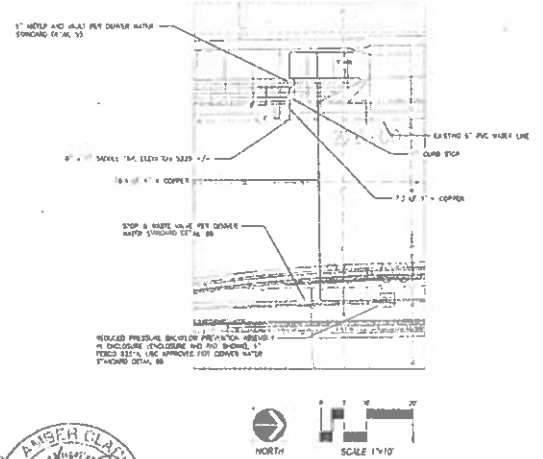
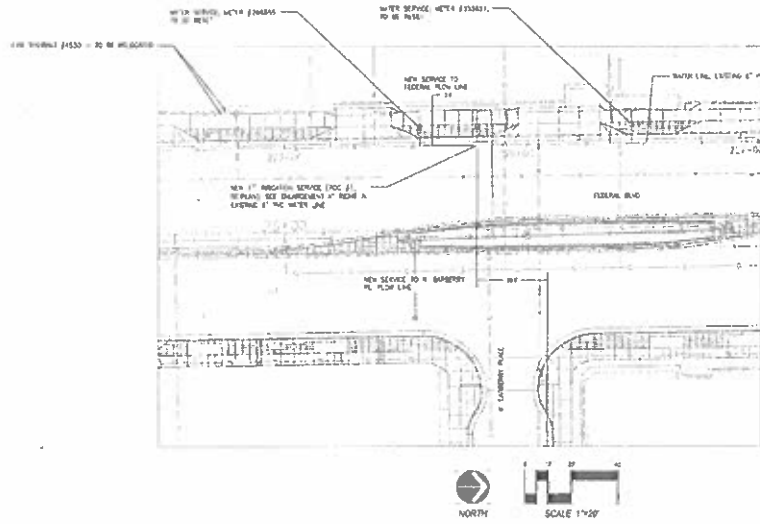
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| | | | | No. of | Structure Numbers | Sheet Number |

SEE BELOW

SEE ABOVE

AN SURMITTAI - JANUARY 9, 2018

IRRIGATION TAP LAYOUT DETAILS - TAP #1



IRRIGATION SUBSET REFERENCE SHEETS:
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 REFER TO SHEET "24" FOR BD TABULATIONS



HydroSystems, Inc. and TSI/URBAS CONSULTING ENGINEERS

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 Drawing File Name: X-17-02188-IRRIGATION
 Horizontal Scale: 1"=20'

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City and County of Denver
 Department of Public Works
 Engineering Section
 225 W. Colfax, Suite 102
 Denver, CO 80202

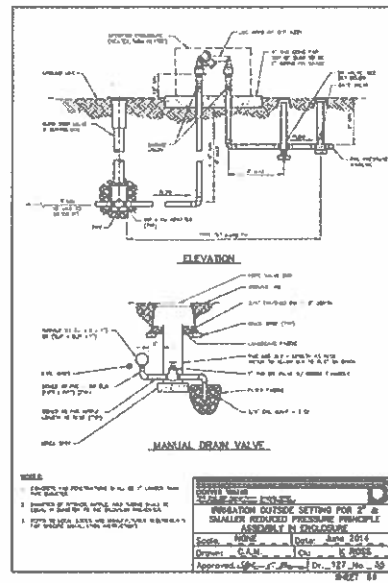
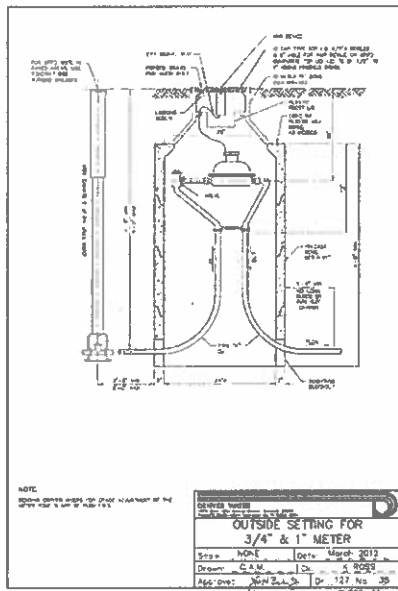
Colorado Department of Transportation
 1100 East 17th Avenue
 Denver, CO 80202
 Region 1

As Constructed
 No Revisions
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FEDERAL BLVD RECON- 5TH AVE TO HOWARD PL
 DENVER WATER NOTES AND EXHIBITS
 Designer: AMC
 Checker: AMC
 Street Subset: IRRIGATION

Project No./Code
 WPP 2813-172
 SA 18937
 2011-PROJNSTR 0000364
 Sheet Number: 574

SD SUBMITTED - JANUARY 9, 2018



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 REFER TO SHEET "24" FOR BID TABULATIONS

HydroSystems-KOL, Inc. **REGISTERED PROFESSIONAL ENGINEER**
 10000 E. 1st Ave., Suite 100, Denver, CO 80231
 TEL: 303.733.8888 FAX: 303.733.8889
TSIOLIVRAS SIVAK HOLDINGNESS
 LICENSED PROFESSIONAL ENGINEER
 10000 E. 1st Ave., Suite 100, Denver, CO 80231
 TEL: 303.733.8888 FAX: 303.733.8889

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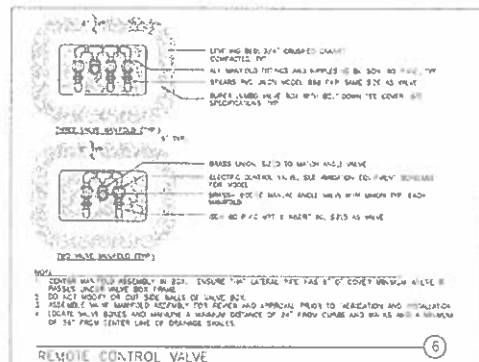
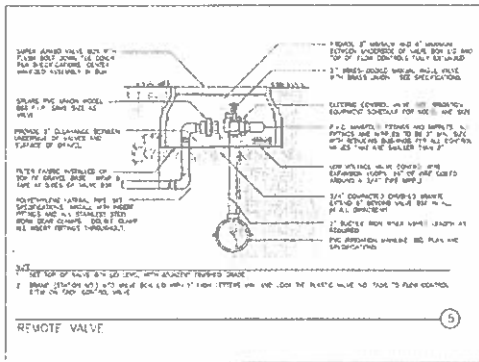
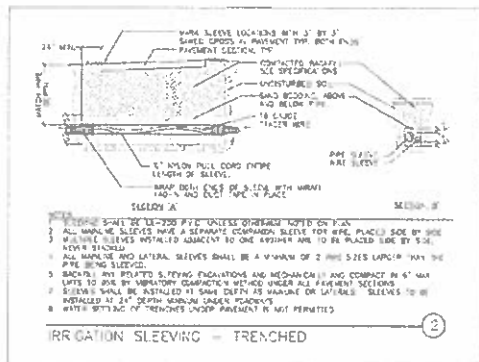
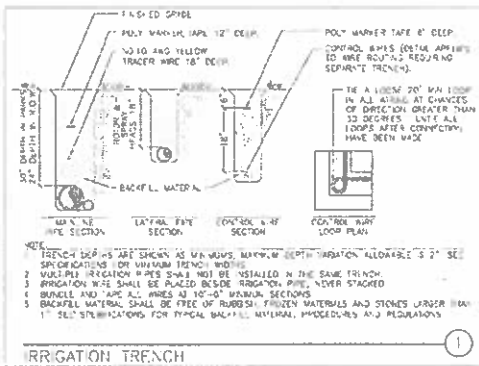
City and County of Denver
 Department of Public Works
 Engineering Division
 301 W. Colfax, Suite 500
 Denver, CO 80202

Colorado Department of Transportation
 1525 Sherman Street
 Denver, CO 80202
 Region 1

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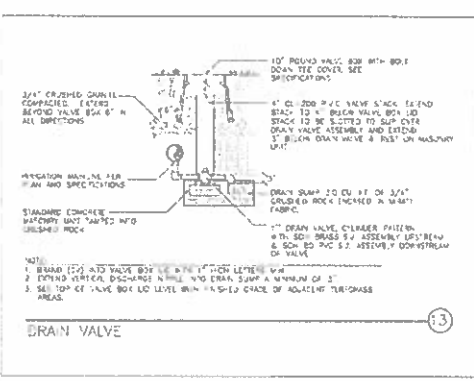
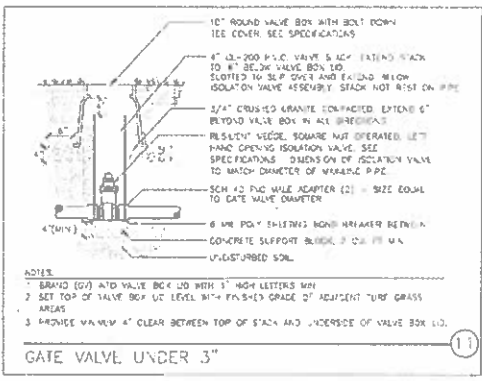
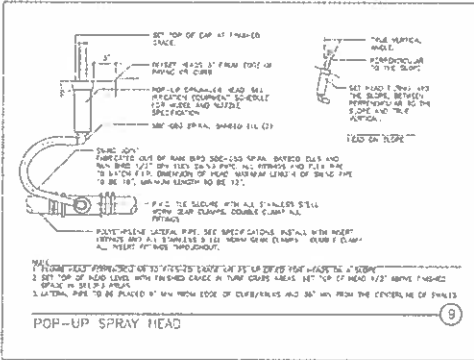
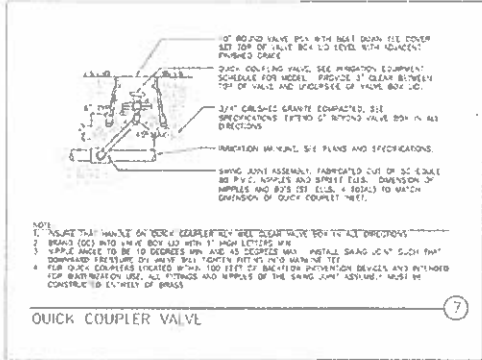
FEDERAL BLVD RECON- 5TH AVE TO HOWARD PL
 DENVER WATER DETAILS

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| Sheet No. | 576 |
| Subject | IRRIGATION Subject Sheets: 16 of 24 |

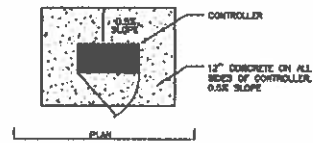
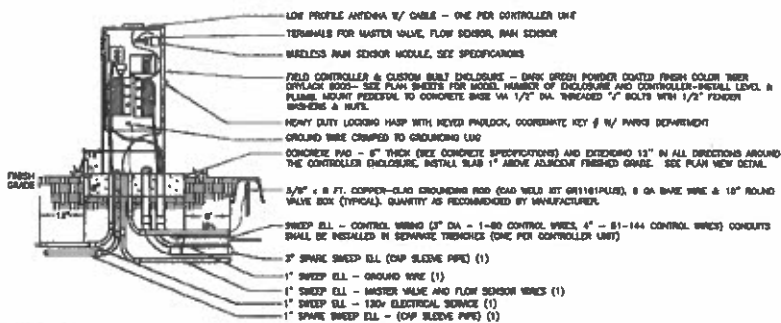


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DATE: 04/04/12



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GENERAL NOTES AND REQUIREMENTS

- 450 MHz RADIO COMMUNICATION SYSTEM SHALL BE FULLY COMPATIBLE WITH EXISTING DENVER DEPARTMENT OF PARKS AND RECREATION CENTRAL CONTROL UNIT RADIO FREQUENCY.
- FLOW SENSOR SHIELDED CABLE (MODEL 71710-4) SHALL BE CONNECTED TO FLOW SENSOR TERMINAL AT TOP OF CONTROLLER.
- MASTER VALVE WIRE SHALL BE CONNECTED TO MASTER VALVE TERMINAL AT THE TOP OF THE CONTROLLER.
- ALL WIRE CONDUITS SHALL BE SCH. 40 PVC CONDUIT AND SHALL EXTEND A MINIMUM OF 12" BEYOND THE CONCRETE SLAB AND CUT FLUSH WITH CONCRETE PAD.
- CONTRACTOR SHALL PROVIDE 48" LENGTH OF SPARE WIRES WITHIN ENCLOSURE. NEATLY COIL WIRES AT BASE OF ENCLOSURE. BUNDLE AND LABEL WIRES ACCORDING TO CONTROLLER DESIGNATION BEYOND ON PLUMB.
- LOCATE CONTROLLER ENCLOSURE SO THAT PIRAZORIN HEADS DO NOT SPRAY INTO CABINETS.
- CONTRACTOR SHALL ARRANGE AND PAY FOR A SITE SURVEY FOR ANTENNA SET-UP FOR MAXIMUM SIGNAL QUALITY FOR EACH CONTROLLER SITE AND OPTIMIZATION OF CENTRAL CONTROL COMMUNICATION AFTER INSTALLATION. CONTACT BRANDON OGLBY AT DPS (303) 961-6680. SURVEY TO BE CONDUCTED PRIOR TO CONSTRUCTION AND ORDERING OF EQUIPMENT AND IN SUMMER TIME DURING FULL TREE LEAF OUT.

ELECTRICAL AND GROUNDING NOTES

- CONTRACTOR TO PROVIDE AND PROVIDE BONDING PROTECTION FOR FIELD UNIT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND GROUND RODS) SPACING 8' GA. (80%) BARE COPPER GROUND WIRE SHALL BE CORRODED AND DAMAGED TO STUCCO ON THE BACKSIDE OF THE PANEL.
- CONTROLLERS SHALL BE EARTH GROUND TESTED VIA MEGGER WITH ACCEPTABLE GROUND RESISTANCE OF 10 OHMS OR LESS. CONTRACTOR SHALL PERFORM GROUNDING TEST IN PRESENCE OF DENVER PARKS & RECREATION REPRESENTATIVE OR CONSULTANT.
- EARTH GROUND MUST BE IN ACCORDANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE (NEC).
- ALL ELECTRICAL WORK TO CONFORM TO LOCAL AND STATE CODES.

CONTROLLER - SINGLE DOOR

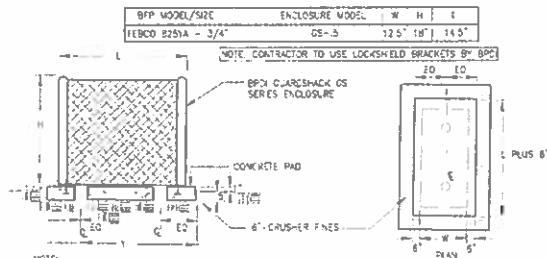
AS NOTED

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HydroSystems-NDL Inc. TSOURNARAS HOLDERNESS CONSULTING ENGINEERS

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| Last Modification Date: 04-04-12 Drawing File Name: X-1102108-IRRIGATION Horizontal Scale: 1"=20' Vert. Scale: As Noted | Sheet Revisions Date: _____ Comments: _____ 1st | City and County of Denver Department of Public Works Engineering Division 201 W. Colfax, Dept. 508 Denver, CO 80202 | California Department of Transportation 600 West 9th Street Sacramento, CA 95833 Region 1 | As Constructed No. Revisions: _____ Revised: _____ Void: _____ | FEDERAL BLVD RECON - 5TH AVE TO HOWARD PL IRRIGATION DETAILS Designer: AMC Checker: AMC Sheet Label: IRRIGATION Subject Sheets 18 of 24 | Project No./Code WPP 2871-17 SA 19997 2011-PRO-BLR-003-361 Sheet Number: 579 |
| | | | | 2012 | | |

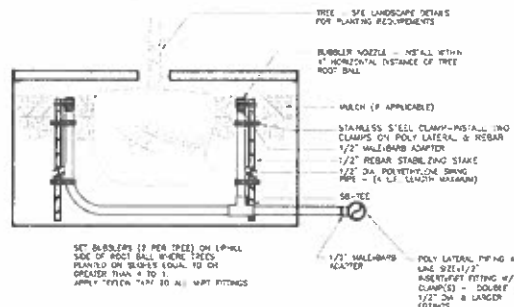
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- NOTE:**
- INSTALL ENCLOSURE AND WIRING AS PER MANUFACTURER'S RECOMMENDATIONS.
 - PROVIDE OWNER WITH KEYS/ PARALLEL FOR ENCLOSURE.
 - PROVIDE ENCLOSURE WITH STANDARD DARK GREEN POWDER COATED FINISH.
 - PAD PENETRATIONS FOR BACKFLOW PREVENTER RISERS TO BE 1" LARGER THAN RISER DIAMETER.
 - TOP SURFACE OF CONCRETE PAD SHALL BE 1" ABOVE FINISH GRADE.
 - PER DENVER WATER REQUIREMENTS, INSTALL ON THE BPP ENCLOSURE, IN A PERMANENT MANNER, THE ADDRESS FOR THE METER IN TEXT THAT IS 2" TALL. COORDINATE GETTING THE METER ADDRESS WITH THE PROJECT MANAGER.

BACKFLOW ENCLOSURE
NOT TO SCALE

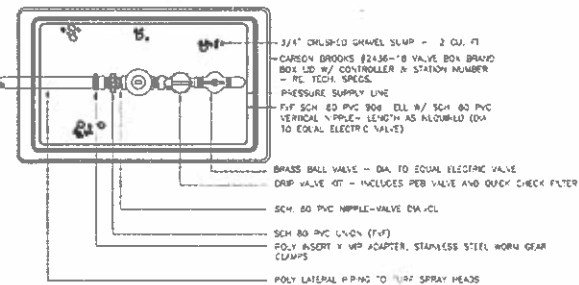
(A)



BUBBLER IN TREE PITS
NOT TO SCALE

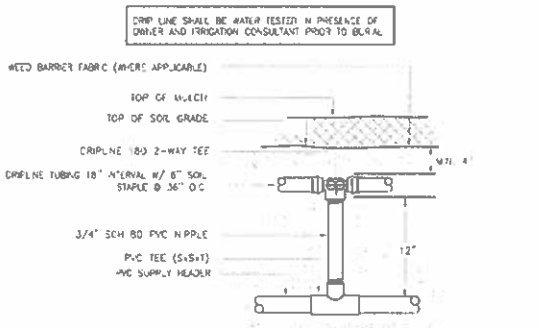
(B)

NOTE:
ONE CONTROL WIRE SHALL BE EXTENDED FROM THE SPRAY CONTROL VALVE TO A STATION ON THE CONTROLLER AT INSTALLATION. AFTER ESTABLISHMENT OF NATURE, THE CONTROL WIRE SHALL BE WIRED TO THE BUBBLER CONTROL VALVE WITHIN THE VALVE BOX. TURF VALVES SHALL REMAIN AS SPRAY AND BUBBLER VALVE IS ONLY TO BE UTILIZED IN TIMES OF PROLONGED WHEN SPRAY IRRIGATION IS NOT ALLOWED. VALVES SHALL NEVER OPERATE SIMULTANEOUSLY. INSTRUCTIONS SHALL BE NOTED ON THE AS-BUILTS.
INSTALL ASSEMBLY TO REST ON GRAVEL SWMP. CONTAIN ENTIRE ASSEMBLY WITHIN BOX. NO VALVE BOX DETACHMENTS ACCEPTED. VALVE BOX TO BE FLUSH WITH FINISH GRADE. PROVIDE 12" HORIZONTAL CLEARANCE BETWEEN VALVE ASSEMBLY AND FILTER BOX.



DRIP CONTROL VALVE KIT
NOT TO SCALE

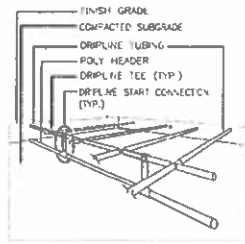
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DRIP LINE START CONNECTION
NOT TO SCALE

(D)

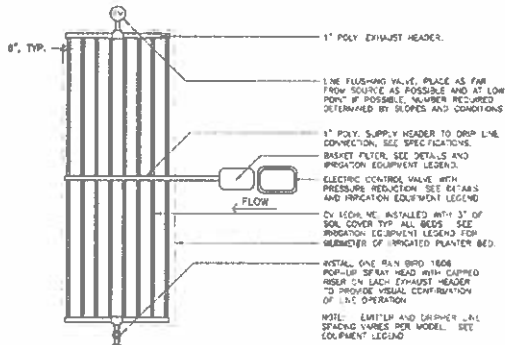
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| Date | Comments | By | | | | | | | | | | |
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- NOTES
1. SEE PLANS & LEGEND FOR ALL DIMENSIONS AND DRIPLINE LATERAL SPACING.
 2. RATIO OF DRIPLINE LATERALS TO START CONNECTIONS IS SHOWN AT 2:1, BUT MAY VARY PER HYDRAULIC DEMAND ON START CONNECTION. (SEE PLANS & LEGEND)
 3. WHERE THERE IS 5 FT ELEVATION CHANGE WITHIN A ZONE, IN-LINE CHECK VALVES SHALL BE PLACED IN SUPPLY LATERAL AT EACH 5 FT CHANGE IN GRADE.

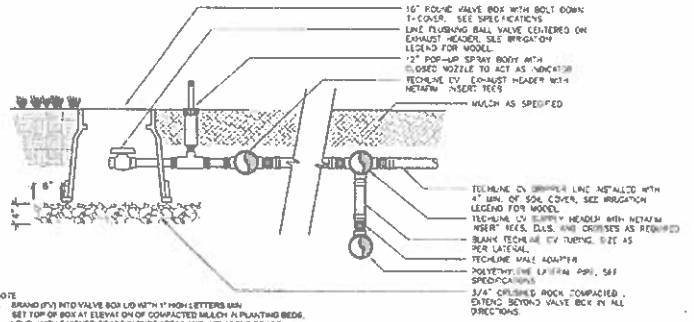
DRIPPERLINE PIPE LAYOUT - ISOMETRIC
NOT TO SCALE

E



DRIP LINE START CONNECTION
NOT TO SCALE

F



- NOTE
1. BRAND (P/N) INTO VALVE BOX LID WITH 1/4\"/>
 2. SET TOP OF BOX AT ELEVATION OF COMPACTED MULCH IN PLANTING BEDS. LEVEL WITH FINISHED GRADE IN TURF AREAS AND 1/2\"/>

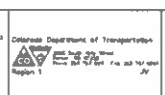
DRIP LINE FLUSH WITH INDICATOR
NOT TO SCALE

G

HydroSystems, Inc. **TSUVARAS ENGINEERING HOLDINGS**
CORPORATE ENGINEERS

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Drawing File Name: X-1102188-IRRIGATION
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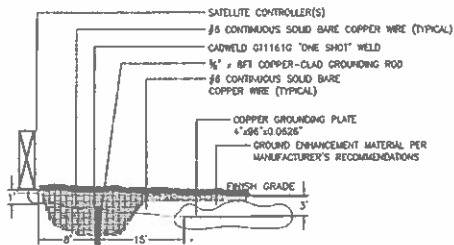
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FEDERAL BLVD RECON - 5TH AVE TO HOWARD PL
IRRIGATION BID TABULATION

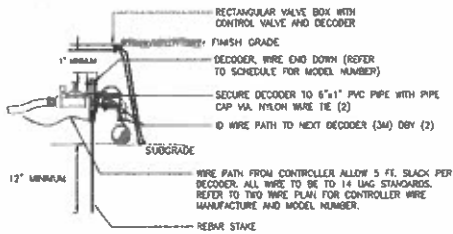
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| Project No./Code | 14 PP 2871-172 SA 19957 |
| | 2011-PP/LM/R-G002M4 |
| Sheet Number | 582 |



GROUNDING MUST MEET ALL MANUFACTURER'S REQUIREMENTS. IN ADDITION, GROUNDING PLATE DESIGN CONSISTS OF ONE VERTICAL 8-FOOT COPPER CLAD GROUNDING ROD (AT LEAST EIGHT FEET FROM THE EQUIPMENT), AND ONE COPPER GROUNDING PLATE PER 40 STATIONS REQUIRING GROUNDING. INSTALL GROUNDING PLATE HORIZONTALLY, THREE FEET DEEP AND 15" FROM THE GROUNDING ROD. SHOULD MULTIPLE RODS/PLATES BE REQUIRED, THEY SHALL BE PLACED A MINIMUM OF 3 LINEAR FEET FROM EACH OTHER. PERFORM CADWELD CONNECTION TO GROUNDING ROD(S) AND PLACEMENT OF GROUNDING PLATE(S) IN OWNER'S PRESENCE PRIOR TO BACKFILL. REFER TO ASIC STANDARDS FOR MORE INFORMATION.

CONTROLLER GROUNDING
NOT TO SCALE

H



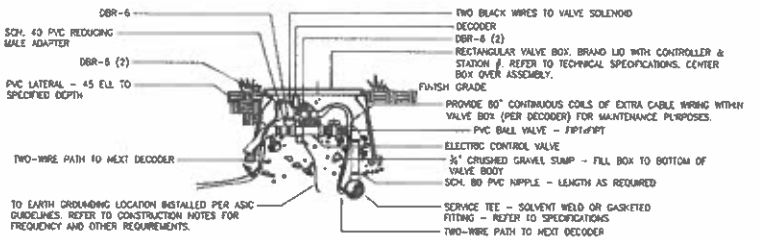
DECODER INSTALLATION - TWO WIRE SYSTEM
NOT TO SCALE

J

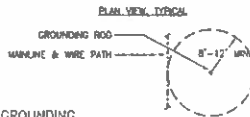
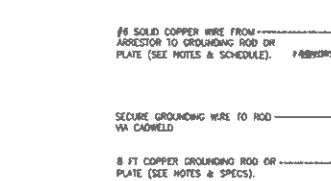
IRRIGATION SUBSET REFERENCE SHEETS:
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REFER TO SHEET "24" FOR BID TABULATIONS

ELECTRIC CONTROL VALVE - TWO WIRE SYSTEM
NOT TO SCALE

I



NOTE: DIAMETERS OF BALL VALVES, PVC FITTINGS AND NIPPLES SHALL EQUAL. ELECTRIC CONTROL VALVE DIAMETER, VALVE BOXES SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO ADJACENT SIDEWALKS AND HARD SURFACES WHERE APPLICABLE. APPLY TEFLON TAPE TO ALL MALE THREADED FITTINGS AND THREADED NIPPLES.



NOTE:
• ALL GROUNDING PER ASIC GUIDELINES.
• GROUNDING ROD MUST BE INSTALLED INSIDE AN IRRIGATED AREA.
• GROUNDING TO 10 OHMS MAXIMUM.
• GENERAL LAYOUT OF ROD AS SHOWN.
• NO ELECTRONIC EQUIPMENT SHALL BE PLACED WITHIN THE GROUNDING ROD BUFFER AREA.
• IF MINIMUM BUFFER AREA CANNOT BE ACHIEVED DUE TO HARBOR LANDSCAPE AREA OR OTHER PHYSICAL RESTRICTIONS, CONTRACTOR TO USE GROUNDING PLATE PER MANUFACTURER'S RECOMMENDATIONS.

ARRESTOR GROUNDING
NOT TO SCALE

K

HydroSystems S&L Inc. CREATION ENGINEERS

| Last Modified: Date: 06-14-17 Drawing File Name: E-1102108-IRRIGATION Horizontal Scale: 1"=20' Vert. Scale: As noted | Sheet Revisions <table border="1"> <thead> <tr> <th>Date</th> <th>Comments</th> <th>By</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> | | Date | Comments | By | | | | City and County of Denver Department - Asset Works Engineering Division 201 W. Colfax, Suite 500 Denver, CO 80202 | Colorado Department of Transportation 4800 East 93rd Avenue Denver, CO 80231 Phone: 303.762.3000 Fax: 303.762.3000 | As Constructed No Revisions Revised Add | FEDERAL BLVD RECON - 5TH AVE TO HOWARD PL IRRIGATION BID TABULATION | Project No./Code 43-00 2013-172 SA 19967 2018-P&MS'R-0000754 |
|---|--|----------|------|----------|----|--|--|--|---|--|---|--|--|
| | Date | Comments | By | | | | | | | | | | |
| | | | | | | | | | | | | | |
| Designer: AIC Structure Detailer: AIC Structure Sheet Count: IRRIGATION Subset Sheets: 23 of 24 | Sheet Number: 583 | | | | | | | | | | | | |

TABULATION OF APPROXIMATE LIGHTING QUANTITIES

| ITEM # | DESCRIPTION | BY CONTRACTOR | UNIT | QTY | NOTES |
|--------|--------------------------|---------------|------|-----|-------|
| 201.01 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.02 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.03 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.04 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.05 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.06 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.07 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.08 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.09 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.10 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.11 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.12 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.13 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.14 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.15 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.16 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.17 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.18 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.19 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.20 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.21 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.22 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.23 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.24 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.25 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.26 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.27 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.28 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.29 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.30 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.31 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.32 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.33 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.34 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.35 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.36 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.37 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.38 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.39 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.40 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.41 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.42 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.43 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.44 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.45 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.46 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.47 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.48 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.49 | EXISTING LIGHT STANDARDS | | EA | 2 | |
| 201.50 | EXISTING LIGHT STANDARDS | | EA | 2 | |

NOTES

1. SCHEDULE 40
2. SCHEDULE 40
3. SCHEDULE 40

ITEM # | **DESCRIPTION** | **UNIT** | **QTY** | **NOTES**

| | | | | |
|--------|--------------------------|----|---|--|
| 201.01 | EXISTING LIGHT STANDARDS | EA | 2 | |
| 201.02 | EXISTING LIGHT STANDARDS | EA | 2 | |

NOTES

1. SCHEDULE 40
2. SCHEDULE 40
3. SCHEDULE 40

LIGHTING REMOVAL NOTES:

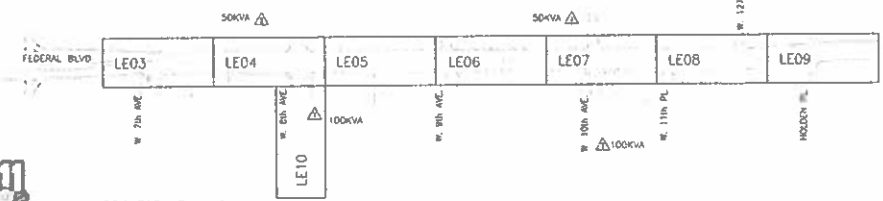
1. EXISTING LIGHT STANDARDS AND WOODEN POLES OVERHEAD ELECTRIC FEED TO BE REMOVED BY XCEL ENERGY FORCES. OVERHEAD ELECTRICAL SERVICE TO BE REROUTED UNDERGROUND LIGHT STANDARD WILL BE UPGRADED TO CITY AND COUNTY OF DENVER STANDARD AS PART OF ITS UNDERGROUNDING PROJECT PER XCEL ENERGY FRANCHISE AGREEMENTS.
2. EXISTING LIGHT STANDARDS ON METAL POLES THAT ARE CURRENTLY UNDERGROUND FEED, WILL BE REMOVED AND RELOCATED AS PART OF THIS SCOPE OF WORK.

GENERAL NOTES:

1. CONTRACTOR TO FURNISH AND INSTALL CONTINUOUS TRACER WIRE FOR ALL ELECTRICAL CONDUITS. THE TRACER WIRE SHALL BE INSTALLED IN THE SAME TRENCH AND MUST PROPERLY IDENTIFY ALL CONDUITS WITHOUT LOSS OR DETRIORATION OF SIGNAL. THE TRACER WIRE SHALL NOT BE PAID FOR SEPARATELY BUT IS INCLUDED IN THE WORKING PAY ITEM AND CONSIDERED INCIDENTAL TO THE WORK.
2. ONCE THE UTILITY REMOVES/DISCONNECTS EXISTING STREETLIGHTS, CONTRACTOR MUST PROVIDE AND MAINTAIN TEMPORARY LIGHTING IN ACCORDANCE WITH THE CITY AND COUNTY OF DENVER'S SIGN TEMPORARY LIGHTING POLICY ON AFFECTED PROJECT AREA FROM A SEPARATE METERED UTILITY SERVICE CONTRACTOR TO LOCATE METER AT A LOCATION THAT COMPLETS WITH THE CITY OF DENVER PERMITTING AND INSPECTION REQUIREMENTS.

LIGHTING/ELECTRICAL LEGEND:

- EXISTING ROADWAY LIGHT STANDARD TO REMAIN - SHOWN FOR INFORMATION ONLY.
- EXISTING LIGHT STANDARD AND LUMINAIRE TO BE REMOVED. LRF# OR LPR# = XCEL, LRF# = BY CONTRACTOR
- LED ROADWAY LIGHT STANDARD (14,000 LUMEN, 140W) TYPE 18 COBRA HEAD, INSTALLED ON 35'-0" POLE, LUMINAIRE AND POLE TO BE FEDERAL GREEN. PROVIDE ALL IN-LINE FUSE HOLDERS AND FUSES IN THE BASE OF EACH STREET LIGHTING POLE AS REQUIRED, PER F.I.P.I. XCEL CAT. 02'S; FOUNDATION ID#2154511, POLE ID#2154300, MAST ARM ID#215611, LUMINAIRE ID#219752.
- ROADWAY LUMINAIRE INSTALLED ON SIGNAL POLE, PER F.I.P.I. XCEL CAT. 02'S; MAST ARM ID#215911, LUMINAIRE ID#219752.
- EXISTING UTILITY POINT OF SERVICE (TRANSFORMER SIZE AS INDICATED)
- IRRIGATION CONTROL VALVE BY IRRIGATION CONTRACTOR, I.E. TO PROVIDE A DUPLEX RECEPTACLE ON THE BACK SIDE OF THE CONTROLLER WITH A WEATHERPROOF WIRE-IN USE COVER. VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.
- TRAFFIC SIGNAL CONTROL CABINET LOCATION
- LUMINAIRE CONTROL CENTER - STAINLESS STEEL ALL-IN-ONE METER POUCH PEDESTAL WITH ALL COMPONENTS LISTED IN THE DETAILS SHALL BE INCLUDED IN THIS PAY ITEM.
- CITY ELECTRIC - CIRCUITRY NUMBER, NUMBER OF ARROWS INDICATE NUMBER OF CIRCUITS. ALL BRANCH CIRCUITS FROM LOC SHALL BE A MINIMUM OF (2#8 THRM & 1#8CHD) IN 2" SCHED 80 PVC CONDUIT, UNLESS NOTED OTHERWISE. 2" TRENCH, BURY AND COMPACTED BACKFILL. ALL CONDUIT RUNS TO THE IRRIGATION CONTROLLER OR TRAFFIC CONTROL CABINET FROM THE NEW 'LCC'. ALL CONDUIT SHALL BE A MINIMUM OF 2" SCHED. 80 PVC UNLESS NOTED OTHERWISE.
- UTILITY ELECTRIC - SERVICE LATERAL/ROADWAY LIGHTING, MINIMUM OF (1/0 AL TH-PEX) IN 2" SCHED 80 PVC CONDUIT UNLESS OTHERWISE NOTED. 2" TRENCH, BURY AND COMPACTED BACKFILL. ALL CONDUIT RUNS IN A COMMON TRENCH WHERE POSSIBLE. ALL CONDUIT SHALL BE A MINIMUM OF 2" SCHED. 80 PVC UNLESS NOTED OTHERWISE.
- SMALL 11"x18"x12" OP. OPEN BOTTOM, CAST POLYMER CONCRETE SPLICE BOX BY QUARTZ WITH TRAFFIC RATED COVER OR APPROVED ALTERNATE, ENGRAVED COVER TO READ: "C=CITY ELECTRIC" AND "U=UTILITY ELECTRIC" PER F.I.P.I. FOR "UTILITY ELECTRICAL" BOXES. PROVIDE SMALL BOX PER XCEL CAT. ID#215571 AND LID ID#215570.
- LARGE 13"x24"x12" OP. OPEN BOTTOM, CAST POLYMER CONCRETE SPLICE BOX BY QUARTZ WITH 2" TRAFFIC RATED COVER OR APPROVED ALTERNATE, ENGRAVED COVER TO READ: "UTILITY ELECTRIC" PER F.I.P.I. PROVIDE LARGE PULL BOX PER XCEL CAT ID#215569 AND LID ID#215567.
- (1/2)" SCHEDULE 80 PVC CONDUIT. SEE PLANS FOR WIRE SIZE.
- (1/2)" SCHEDULE 40 PVC CONDUIT TERMINATING IN SPLICE BOXES, UNLESS NOTED OTHERWISE, TRENCH AND BURY THIS CONDUIT PRIOR TO PAVING PROVIDE THE APPROPRIATE SPLICE BOX ON BOTH ENDS.
- EXISTING OVERHEAD ELECTRIC SERVICE FROM SURVEY MODEL - NOT VERIFIED FOR INFORMATION ONLY.
- EXISTING UNDERGROUND ELECTRIC SERVICE FROM SURVEY MODEL - NOT VERIFIED, FOR INFORMATION ONLY.



PROJECT KEY MAP
SEE S.

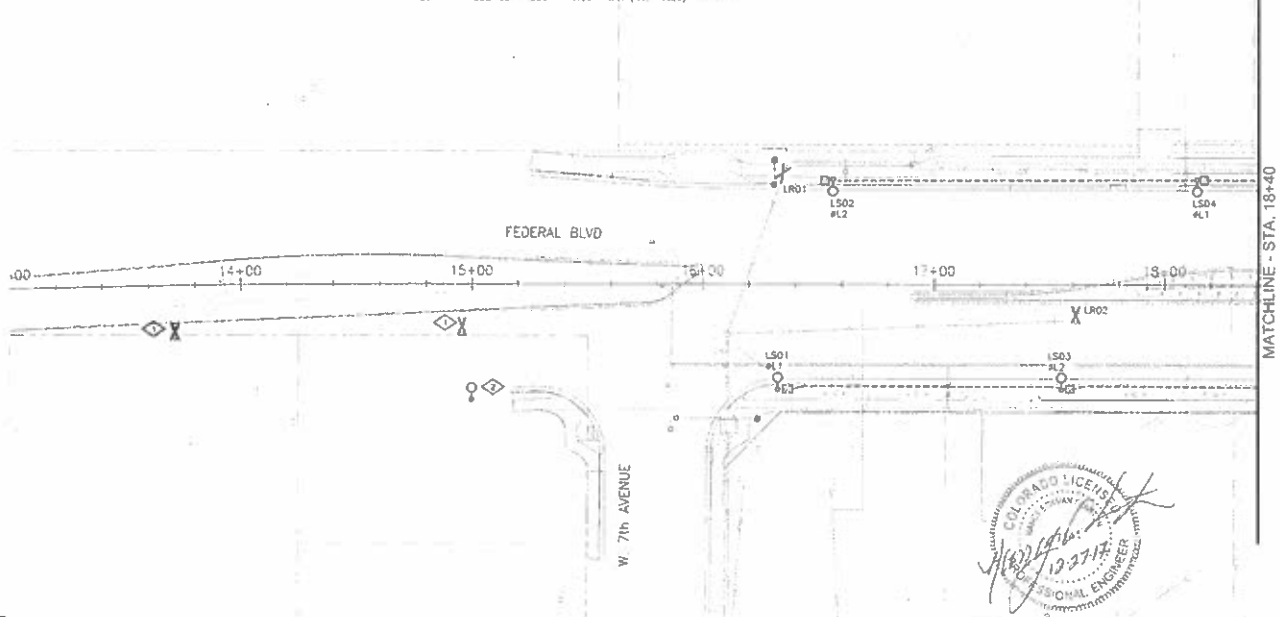
TSOUKARAS & ASSOCIATES
Landscape Architecture
TSOUKARAS & ASSOCIATES
Landscape Architecture

| <p>1. Modification Date: 05-12-17</p> <p>2. Drawing Date: 05-12-17</p> <p>3. Project Name: SEE SAP SCALE</p> | <p>Sheet Revisions</p> <table border="1"> <tr> <th>No.</th> <th>Description</th> </tr> <tr> <td> </td> <td> </td> </tr> </table> | No. | Description | | | <p>City of Denver Department of Transportation Region 1</p> | <p>As Constructed</p> <p>No. Revisions: 0</p> <p>Scale: 1"=40'</p> <p>Project No. 601</p> | <p>FEDERAL BLVD RECON - 5TH AVE. TO HOWARD PLACE ROADWAY LIGHTING TABULATIONS AND NOTES</p> <p>Project No./Code 601</p> |
|--|---|-----|-------------|--|--|---|---|---|
| No. | Description | | | | | | | |
| | | | | | | | | |

AN SURMITTAI - JANUARY 7 2018

PLAN NOTES:

- ◇ LIGHT STANDARD REFLECTOR BY CDOT, QUANTITY TABULATED IN CDOT PROJECT PLAN (NO. 1662B), SHOWN FOR REFERENCE ONLY.
- ◇ LIGHT STANDARD REFLECTOR AT THIS APPROXIMATE LOCATION BY CDOT, QUANTITY TABULATED IN CDOT PROJECT PLAN (NO. 1662B).



TSOLIMAS & ASSOCIATES
 10010 E. 10th Avenue, Suite 100
 Denver, CO 80231
 TEL: 303.751.1000
 FAX: 303.751.1001
 WWW.TSOLIMAS.COM



TSOLIMAS **HOLDERNESS**
 CONSULTING ENGINEERS



| |
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| 811 Modification Date: 07/15/2016 Name of the Owner: [Redacted] Horizontal Scale: 1" = 30' (AS SHOWN) Vertical Scale: 1" = 4' |
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| Sheet Revisions | |
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| Date | Description |
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Colorado Department of Transportation
 Region 1

As Constructed

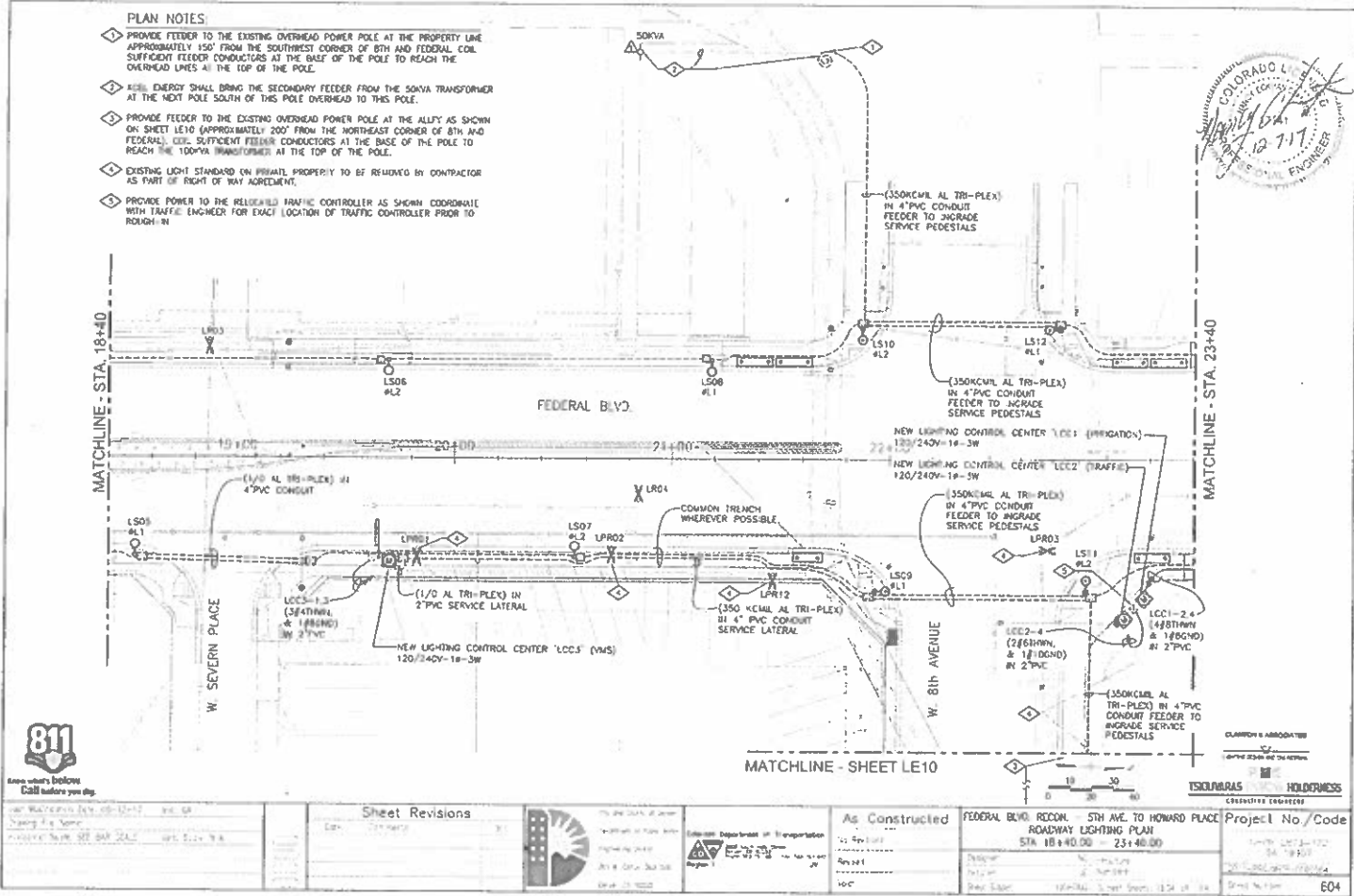
FEDERAL BLVD. RECON. - 5TH AVE TO HOWARD PLACE
 ROADWAY LIGHTING PLAN
 STA 13+00.00 - STA 18+40.00

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|------------------|-----|
| Project No./Code | 603 |
| Sheet Number | 603 |

APPROVED FOR SUBMITTAL - JANUARY 7, 2016

PLAN NOTES

- ◆ PROVIDE FEEDER TO THE EXISTING OVERHEAD POWER POLE AT THE PROPERTY LINE APPROXIMATELY 150' FROM THE SOUTHWEST CORNER OF 8TH AND FEDERAL. COIL SUFFICIENT FEEDER CONDUCTORS AT THE EAST OF THE POLE TO REACH THE OVERHEAD LINES AT THE TOP OF THE POLE.
- ◆ THE ENERGY SHALL BRING THE SECONDARY FEEDER FROM THE SONVA TRANSFORMER AT THE NEXT POLE SOUTH OF THIS POLE OVERHEAD TO THIS POLE.
- ◆ PROVIDE FEEDER TO THE EXISTING OVERHEAD POWER POLE AT THE ALTY AS SHOWN ON SHEET LE10 (APPROXIMATELY 200' FROM THE NORTHEAST CORNER OF 8TH AND FEDERAL). COIL SUFFICIENT FEEDER CONDUCTORS AT THE BASE OF THE POLE TO REACH THE 100'VA TRANSFORMER AT THE TOP OF THE POLE.
- ◆ EXISTING LIGHT STANDARD ON PRIVATE PROPERTY TO BE REMOVED BY CONTRACTOR AS PART OF RIGHT OF WAY AGREEMENT.
- ◆ PROVIDE POWER TO THE REDEVELOPED TRAFFIC CONTROLLER AS SHOWN COORDINATE WITH TRAFFIC ENGINEER FOR EXACT LOCATION OF TRAFFIC CONTROLLER PRIOR TO TROUGH-IN.

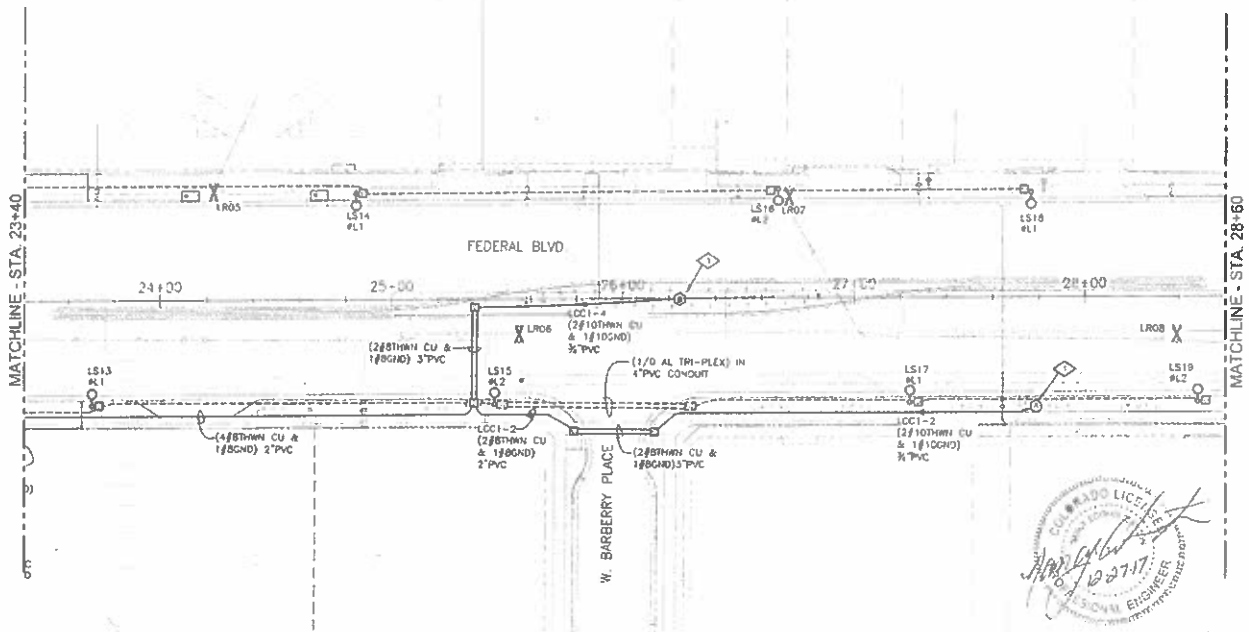


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| <p>811 Know what's below. Call before you dig.</p> | | <p>Sheet Revisions</p> | | <p>As Constructed</p> | | <p>FEDERAL BLVD. RECON. 5TH AVE. TO HOWARD PLACE ROADWAY LIGHTING PLAN STA. 18+40.00 - 23+40.00</p> | | <p>Project No./Code 604</p> | |
| <p>DATE: 10/17/17 DRAWN BY: [Name] CHECKED BY: [Name]</p> | | <p>DATE: 10/17/17 DRAWN BY: [Name] CHECKED BY: [Name]</p> | | <p>DATE: 10/17/17 DRAWN BY: [Name] CHECKED BY: [Name]</p> | | <p>DATE: 10/17/17 DRAWN BY: [Name] CHECKED BY: [Name]</p> | | <p>DATE: 10/17/17 DRAWN BY: [Name] CHECKED BY: [Name]</p> | |

APRIL 10 2018

PLAN NOTES

- ◇ PROVIDE (2#10THRU & 1#10CND) IN 3/4" CONDUIT FROM SPLICE BOX TO IRRIGATION CONTROLLER LOCATION. COORDINATE WITH LANDSCAPE CONTRACTOR FOR EXACT LOCATION OF IRRIGATION CONTROLLER PRIOR TO ROUGH-IN.



Professional Engineer Seal
 Colorado License No. 102717
 TSOULNARIS HOLDINGS



Let's Work Together
 Call before you dig.
 1-800-4-A-DIG
 1-800-4-ADIG
 1-800-4-ADIG

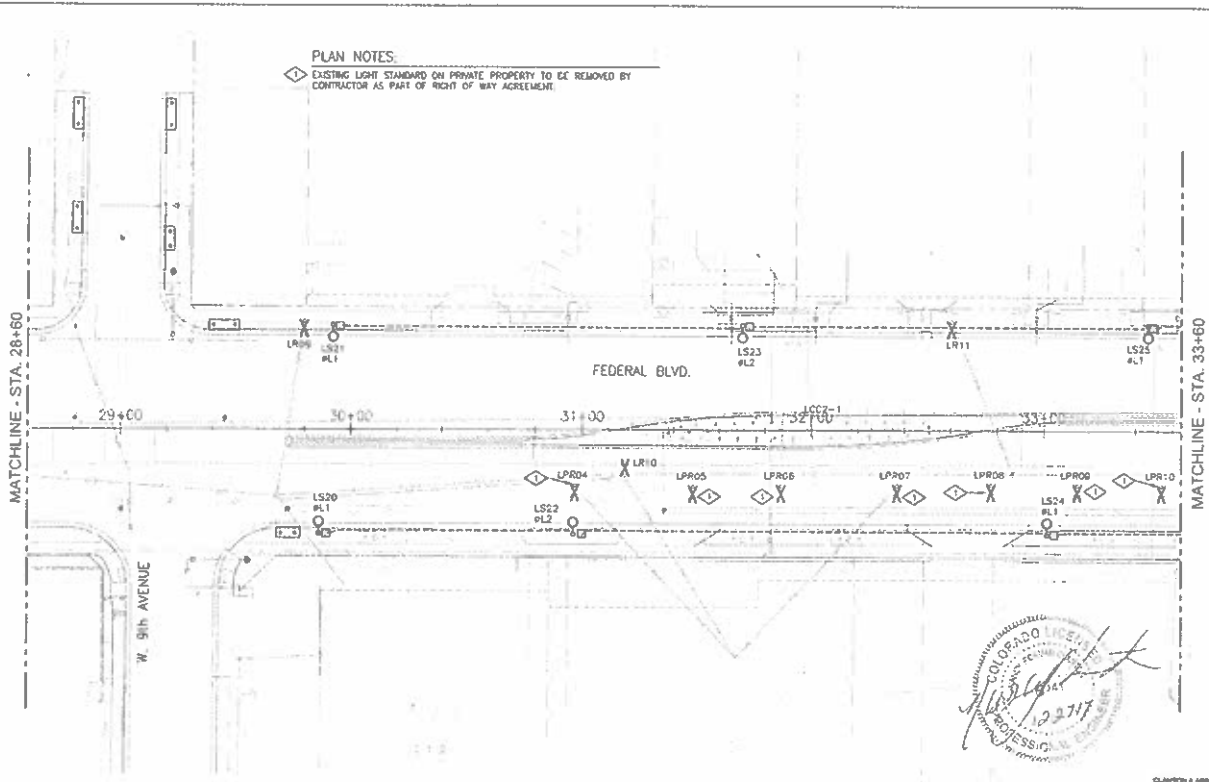
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As Constructed
 FEDERAL BLVD. RECON - 5TH AVE TO HOWARD PLACE
 ROADWAY LIGHTING PLAN
 STA 23+40.00 - 28+60.00

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| Project No./Code | 605 |
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PLAN NOTES
 ◇ EXISTING LIGHT STANDARD ON PRIVATE PROPERTY TO BE REMOVED BY CONTRACTOR AS PART OF RIGHT OF WAY AGREEMENT.

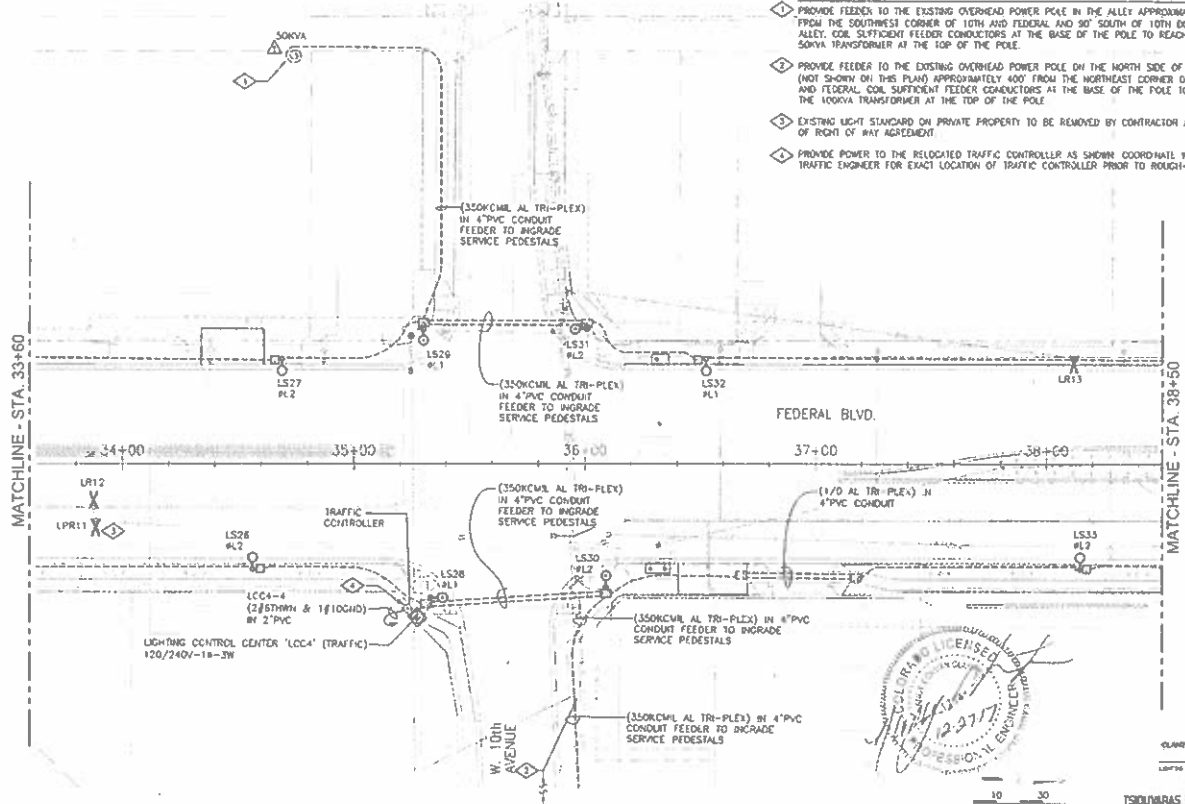


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 www.claytonandassociates.com

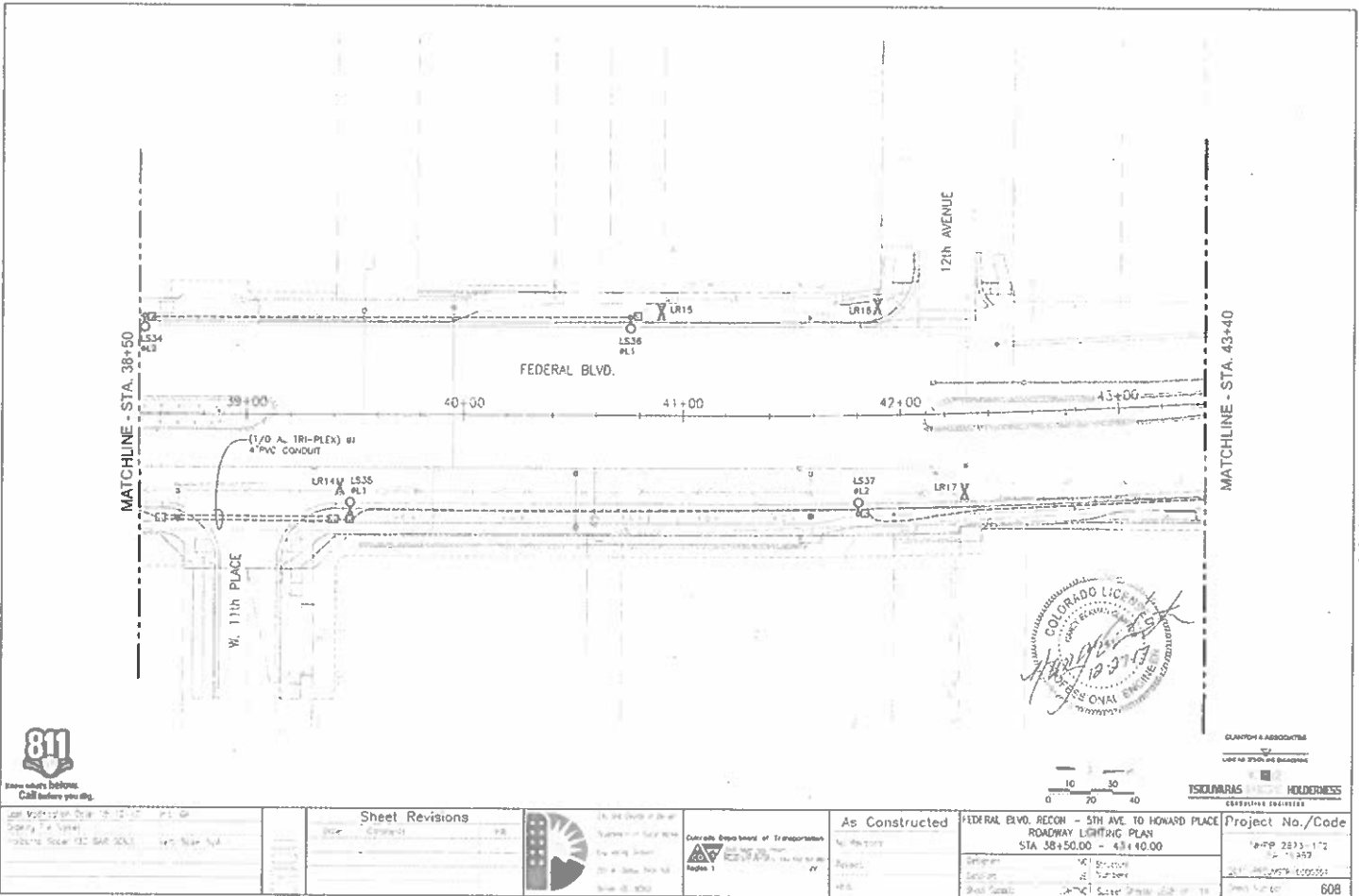
| <p>811 Call before you dig</p> <p>811 Call before you dig</p> | <p>Sheet Revisions</p> <table border="1"> <tr> <th>No.</th> <th>Description</th> <th>Date</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table> | No. | Description | Date | | | | <p>Colorado Department of Transportation 4300 East 93rd Avenue, Suite 300 Denver, CO 80231</p> | <p>As Constructed</p> <table border="1"> <tr> <td>No. Revisions</td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table> | No. Revisions | | | | <p>FEDERAL BLVD REDDEN - 5TH AVE TO HOWARD PLACE ROADWAY LIGHTING PLAN STA 28+60.00 - 33+60.00</p> <table border="1"> <tr> <td>Drawn by</td> <td>M. Sturison</td> </tr> <tr> <td>Checked by</td> <td>J. Lutz</td> </tr> <tr> <td>Project No.</td> <td>606</td> </tr> </table> | Drawn by | M. Sturison | Checked by | J. Lutz | Project No. | 606 | <p>Project No./Code</p> <table border="1"> <tr> <td>Project No.</td> <td>28-2-172</td> </tr> <tr> <td>Code</td> <td>03 - STREET</td> </tr> <tr> <td>Sheet No.</td> <td>606</td> </tr> </table> | Project No. | 28-2-172 | Code | 03 - STREET | Sheet No. | 606 |
|---|--|------|-------------|------|--|--|--|--|--|---------------|--|--|--|--|----------|-------------|------------|---------|-------------|-----|---|-------------|----------|------|-------------|-----------|-----|
| No. | Description | Date | | | | | | | | | | | | | | | | | | | | | | | | | |
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| No. Revisions | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Drawn by | M. Sturison | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Checked by | J. Lutz | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project No. | 606 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project No. | 28-2-172 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Code | 03 - STREET | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sheet No. | 606 | | | | | | | | | | | | | | | | | | | | | | | | | | |

PLAN NOTES.

- 1. PROVIDE FEEDER TO THE EXISTING OVERHEAD POWER POLE IN THE ALLEY APPROXIMATELY 140' FROM THE SOUTHWEST CORNER OF 10TH AND FEDERAL AND 30' SOUTH OF 10TH DOWN ALLEY. COIL SUFFICIENT FEEDER CONDUCTORS AT THE BASE OF THE POLE TO REACH THE SOKVA TRANSFORMER AT THE TOP OF THE POLE.
- 2. PROVIDE FEEDER TO THE EXISTING OVERHEAD POWER POLE ON THE NORTH SIDE OF 10TH (NOT SHOWN ON THIS PLAN) APPROXIMATELY 400' FROM THE NORTHEAST CORNER OF 10TH AND FEDERAL. COIL SUFFICIENT FEEDER CONDUCTORS AT THE BASE OF THE POLE TO REACH THE 100KVA TRANSFORMER AT THE TOP OF THE POLE.
- 3. EXISTING LIGHT STANDARD ON PRIVATE PROPERTY TO BE REMOVED BY CONTRACTOR AS PART OF RIGHT OF WAY AGREEMENT.
- 4. PROVIDE POWER TO THE RELOCATED TRAFFIC CONTROLLER AS SHOWN. COORDINATE WITH TRAFFIC ENGINEER FOR EXACT LOCATION OF TRAFFIC CONTROLLER PRIOR TO ROUGH-IN.



| | | | | |
|---|--|--|---|---|
| <p>Use MapReader Site 75-10-1 CA Working 7:30 AM Hazardous Waste S&I Data 2018 147-0000-104</p> | <p>Sheet Revisions</p> <p>DATE COMMENTS</p> | <p>California Department of Transportation</p> | <p>As Constructed</p> <p>FEDERAL BLVD. RECON - 5TH AVE. TO HOWARD PLACE ROADWAY LIGHTING PLAN STA 33+60.00 - 38+50.00</p> | <p>Project No./Code</p> <p>607</p> |
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Know where you dig. Call before you dig.

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| Job No. 2013-112 Date: 10/15/13 102116 Total 112 BAR 2013 |
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| Sheet Revisions | |
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| 1 | Correct |



Colorado Department of Transportation
 Region 1

As Constructed

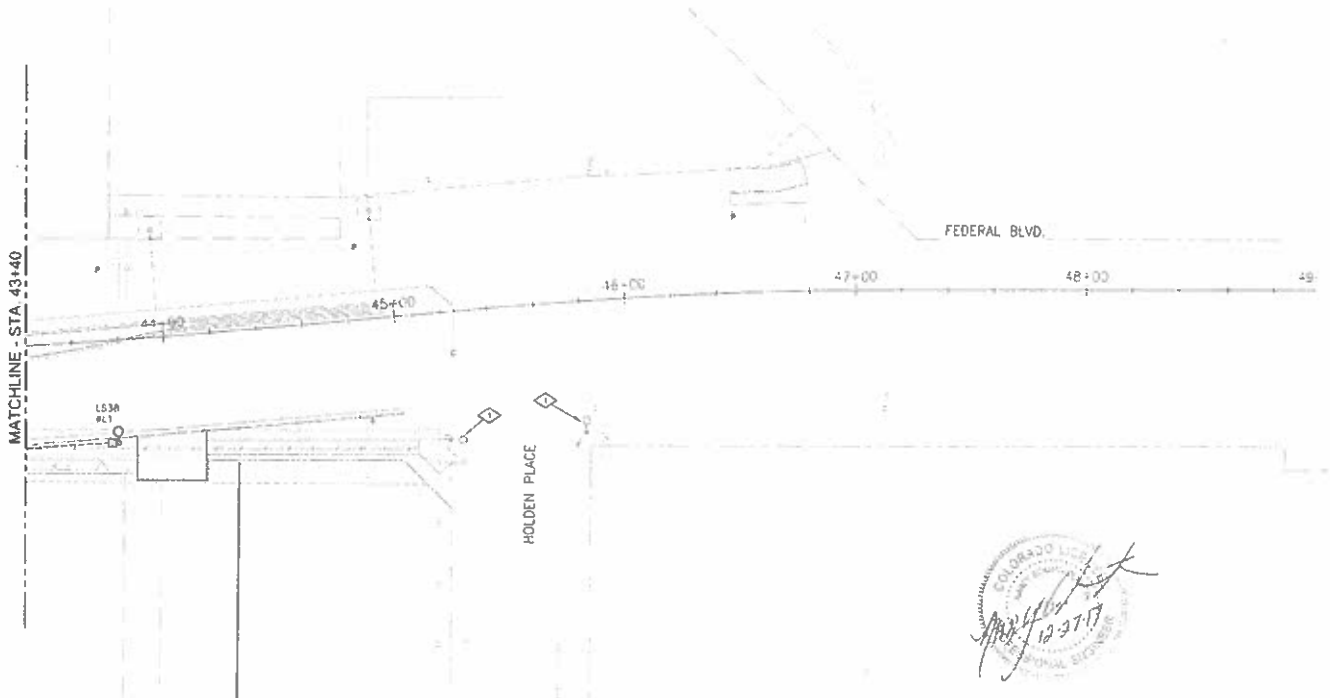
FEDERAL BLVD. RECON - 5TH AVE TO HOWARD PLACE
 ROADWAY LIGHTING PLAN
 STA 38+50.00 - 43+40.00

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| Sheet No. | 112-112 |
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| Date | 10/15/13 |
| Drawn by | 608 |

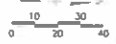
AT C/REMITTAL - 10/15/13 BY 7-2013

PLAN NOTES:

◊ EXISTING LIGHT STANDARD TO REMAIN



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 TEL: 303.733.8800
 FAX: 303.733.8801
 WWW: CLARKSONANDASSOCIATES.COM

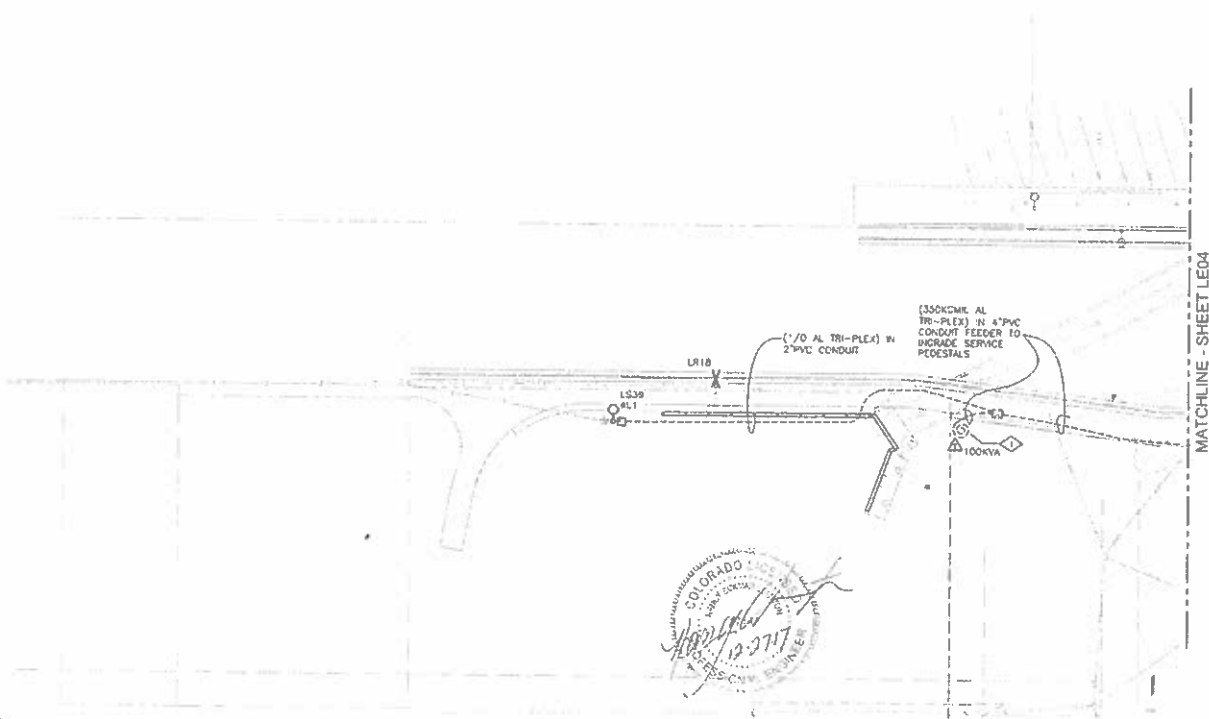


| <p>811 logo Know what's Below! Call before you dig.</p> | <p>Sheet Revisions</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Description</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> | No. | Description | Date | | | | <p>Colorado Department of Transportation Department of Public Works Engineering Division 100 S. Cache La Poudre St. Denver, CO 80202</p> | <p>As Constructed</p> <p>No. 111-0001 Revised 11/4</p> | <p>FEDERAL BLVD REDON - 5TH AVE. TO HENARD PLACE ROADWAY LIGHTING PLAN STA 43+40.00 - 49+97.00</p> <p>DATE: 12-27-17 DRAWN BY: J. NUNN CHECKED BY: J. NUNN SCALE: 1/8" = 1'-0"</p> | <p>Project No./Code</p> <p>111-0001-0001 609</p> |
|---|---|------|-------------|------|--|--|--|--|--|---|---|
| No. | Description | Date | | | | | | | | | |
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AD SURMITTAI - JANUARY 2, 2018

PLAN NOTES:

- 1. PROVIDE FEEDER TO THE EXISTING OVERHEAD POWER POLE AT THE ALLEY. COIL SUFFICIENT FEEDER CONDUCTORS AT THE BASE OF THE POLE TO REACH THE 100KVA TRANSFORMER AT THE TOP OF THE POLE.



MATCHLINE - SHEET LEO4



ELAMPH & ASSOCIATES
10750 1/2 W. 10th Ave. Suite 100
DENVER, CO 80202
TEL: 303.733.8800
WWW.ELAMPH.COM

TSOUKAS & WALKER HOLDINGS
CONSULTING ENGINEERS

| <p>811 Call before you dig</p> <p>FOR MORE INFORMATION VISIT 811.COLORADO.GOV OR CALL 811</p> | <p>Sheet Revisions</p> <table border="1"> <tr> <th>NO.</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table> | NO. | DESCRIPTION | DATE | | | | <p>Colorado Department of Transportation 1525 Lincoln Street Denver, CO 80202 TEL: 303.762.2700 WWW.CDOT.GOV</p> | <p>As Constructed</p> <p>Project Name: FEDERAL BLVD RECON - 5TH AVE TO HOWARD PLACE Roadway Lighting Plan W. 8th Ave.</p> <p>Scale: 1" = 40'</p> | <p>Project No./Code</p> <p>Project No.: 12-2717-77 Code: SA-1995</p> | <p>Sheet Number: 610</p> |
|---|--|------|-------------|------|--|--|--|--|---|---|---------------------------------|
| NO. | DESCRIPTION | DATE | | | | | | | | | |
| | | | | | | | | | | | |

| MOUNTING SURFACE | | (IRRIGATION) | | PANEL 'LEC1' | | 120/240V-1PH-3W | | | | |
|-----------------------------|-----|--|-------------|---------------------------|----|----------------------|------|----|-------------|--------------------------------|
| FEEDER TOP | | METER POWER PEDESTAL, ALL-IN-ONE, STAINLESS STEEL, NEMA 3R ENCLOSURE | | Minimum AIC = 10,000 AMPS | | 100 AMP MAIN BREAKER | | | | |
| | | BRANCH BREAKER | | LEFT PHASE LOAD | | RIGHT PHASE LOAD | | | | |
| DESCRIPTION | Qty | P | Code | L1 | L2 | Code | Size | P | DESCRIPTION | |
| LOC MOUNT RECT | 20 | 1 | 1 | 180 | | 180 | 2 | 20 | 1 | IRRIGATION CONTROLLER 'A' |
| SPARE | 20 | 1 | 3 | | | 180 | 4 | 20 | 1 | IRRIGATION CONTROLLER 'B' |
| SPACE ONLY | | | 5 | | | | | | | SPACE ONLY |
| | | | | 180 | 0 | 180 | 0 | | | |
| | | | | 360 | 0 | 360 | 0 | | | Total Connected VA |
| | | | | 360 | 0 | 360 | 0 | | | Total Connected VA - 800 Phase |
| LOAD | | CONNECTED | FACT | Est. kVA | | Amps | | | | |
| LIGHTING | | 0 VA | 1.75 | 0.00 | | | | | | |
| RECEPTACLES (15T 10000) | | 180 VA | 1.00 | 0.18 | | | | | | 180 VA Total Receptacle Load |
| RECEPTACLES (REMAINING) | | 0 VA | 0.50 | 0.00 | | | | | | |
| NEEDLE (LARGEST) | | 0 VA | 1.25 | 0.00 | | | | | | |
| MOTORS (REMAINING) | | 0 VA | 1.00 | 0.00 | | | | | | |
| ELECTRICAL HEATING | | 0 VA | 1.25 | 0.00 | | | | | | |
| ELECTRICAL MISC | | 360 VA | 1.00 | 0.36 | | | | | | |
| TOTAL ESTIMATED LOAD | | 540 VA | 6.54 | 0.36 | | | | | | |

| MOUNTING SURFACE | | (TRAFFIC) | | PANEL 'LEC2' | | 120/240V-1PH-3W | | | | |
|-----------------------------|-----|--|-------------|---------------------------|----|----------------------|------|----|-------------|--------------------------------|
| FEEDER TOP | | METER POWER PEDESTAL, ALL-IN-ONE, STAINLESS STEEL, NEMA 3R ENCLOSURE | | Minimum AIC = 10,000 AMPS | | 100 AMP MAIN BREAKER | | | | |
| | | BRANCH BREAKER | | LEFT PHASE LOAD | | RIGHT PHASE LOAD | | | | |
| DESCRIPTION | Qty | P | Code | L1 | L2 | Code | Size | P | DESCRIPTION | |
| SPARE | 20 | 1 | 1 | | | 180 | 2 | 20 | 1 | LOC MOUNT RECT |
| SPACE ONLY | | | 3 | | | | | | | TRAFFIC CONTROLLER |
| SPACE ONLY | | | 5 | | | | | | | SPACE ONLY |
| | | | | 0 | 0 | 180 | 2 | 20 | 1 | |
| | | | | 0 | 0 | 180 | 2 | 20 | 1 | Total Connected VA |
| | | | | 0 | 0 | 180 | 2 | 20 | 1 | Total Connected VA - 800 Phase |
| LOAD | | CONNECTED | FACT | Est. kVA | | Amps | | | | |
| LIGHTING | | 180 VA | 1.75 | 0.32 | | | | | | |
| RECEPTACLES (15T 10000) | | 360 VA | 1.00 | 0.36 | | | | | | 360 VA Total Receptacle Load |
| RECEPTACLES (REMAINING) | | 0 VA | 0.50 | 0.00 | | | | | | |
| NEEDLE (LARGEST) | | 278 VA | 1.25 | 0.15 | | | | | | |
| MOTORS (REMAINING) | | 0 VA | 1.00 | 0.00 | | | | | | |
| ELECTRICAL HEATING | | 600 VA | 1.25 | 0.30 | | | | | | |
| ELECTRICAL MISC | | 180 VA | 1.00 | 0.18 | | | | | | |
| TOTAL ESTIMATED LOAD | | 1200 VA | 7.89 | 0.76 | | | | | | |

| MOUNTING SURFACE | | (VMS) | | PANEL 'LEC3' | | 120/240V-1PH-3W | | | | |
|-----------------------------|-----|--|-------------|---------------------------|----|----------------------|------|----|-------------|--------------------------------|
| FEEDER TOP | | METER POWER PEDESTAL, ALL-IN-ONE, STAINLESS STEEL, NEMA 3R ENCLOSURE | | Minimum AIC = 10,000 AMPS | | 100 AMP MAIN BREAKER | | | | |
| | | BRANCH BREAKER | | LEFT PHASE LOAD | | RIGHT PHASE LOAD | | | | |
| DESCRIPTION | Qty | P | Code | L1 | L2 | Code | Size | P | DESCRIPTION | |
| VARIABLE MESSAGE SIGN | 50 | 1 | 1 | 462 | | 462 | 2 | 50 | 1 | LOC MOUNT RECT |
| SPARE | | | 3 | | | | | | | SPARE |
| SPACE ONLY | | | 5 | | | | | | | SPACE ONLY |
| | | | | 462 | 0 | 462 | 0 | | | |
| | | | | 462 | 0 | 462 | 0 | | | Total Connected VA |
| | | | | 462 | 0 | 462 | 0 | | | Total Connected VA - 800 Phase |
| LOAD | | CONNECTED | FACT | Est. kVA | | Amps | | | | |
| LIGHTING | | 240 VA | 1.75 | 0.42 | | | | | | |
| RECEPTACLES (15T 10000) | | 180 VA | 1.00 | 0.18 | | | | | | 180 VA Total Receptacle Load |
| RECEPTACLES (REMAINING) | | 0 VA | 0.50 | 0.00 | | | | | | |
| NEEDLE (LARGEST) | | 631 VA | 1.25 | 0.28 | | | | | | |
| MOTORS (REMAINING) | | 0 VA | 1.00 | 0.00 | | | | | | |
| ELECTRICAL HEATING | | 1500 VA | 1.25 | 0.90 | | | | | | |
| ELECTRICAL MISC | | 180 VA | 1.00 | 0.18 | | | | | | |
| TOTAL ESTIMATED LOAD | | 2751 VA | 8.94 | 1.78 | | | | | | |

| MOUNTING SURFACE | | (TRAFFIC) | | PANEL 'LEC4' | | 120/240V-1PH-3W | | | | |
|-----------------------------|-----|--|-------------|---------------------------|----|----------------------|------|----|-------------|--------------------------------|
| FEEDER TOP | | METER POWER PEDESTAL, ALL-IN-ONE, STAINLESS STEEL, NEMA 3R ENCLOSURE | | Minimum AIC = 10,000 AMPS | | 100 AMP MAIN BREAKER | | | | |
| | | BRANCH BREAKER | | LEFT PHASE LOAD | | RIGHT PHASE LOAD | | | | |
| DESCRIPTION | Qty | P | Code | L1 | L2 | Code | Size | P | DESCRIPTION | |
| SPARE | 20 | 1 | 1 | | | 180 | 2 | 20 | 1 | TRAFFIC CONTROLLER |
| SPARE | 20 | 1 | 3 | | | | | | | LOC MOUNT RECT |
| SPACE ONLY | | | 5 | | | | | | | SPACE ONLY |
| | | | | 0 | 0 | 360 | 2 | 20 | 1 | |
| | | | | 0 | 0 | 360 | 2 | 20 | 1 | Total Connected VA |
| | | | | 0 | 0 | 360 | 2 | 20 | 1 | Total Connected VA - 800 Phase |
| LOAD | | CONNECTED | FACT | Est. kVA | | Amps | | | | |
| LIGHTING | | 180 VA | 1.75 | 0.32 | | | | | | |
| RECEPTACLES (15T 10000) | | 360 VA | 1.00 | 0.36 | | | | | | 360 VA Total Receptacle Load |
| RECEPTACLES (REMAINING) | | 0 VA | 0.50 | 0.00 | | | | | | |
| NEEDLE (LARGEST) | | 278 VA | 1.25 | 0.15 | | | | | | |
| MOTORS (REMAINING) | | 0 VA | 1.00 | 0.00 | | | | | | |
| ELECTRICAL HEATING | | 600 VA | 1.25 | 0.30 | | | | | | |
| ELECTRICAL MISC | | 180 VA | 1.00 | 0.18 | | | | | | |
| TOTAL ESTIMATED LOAD | | 1200 VA | 7.89 | 0.76 | | | | | | |



Some signs below
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100 W. 10th Ave. Suite 100
DENVER, CO 80202
TSOURAS & HELDERNESS
CONSULTING ENGINEERS

San Vallecito Drive 10-10-10-10
Drawing No. 10-10-10-10
10-10-10-10-10-10-10-10

Sheet Revisions

| No. | Description | Date |
|-----|----------------|----------|
| 1 | As Constructed | 10-10-10 |



Colorado Department of Transportation
10-10-10-10-10-10-10-10

As Constructed

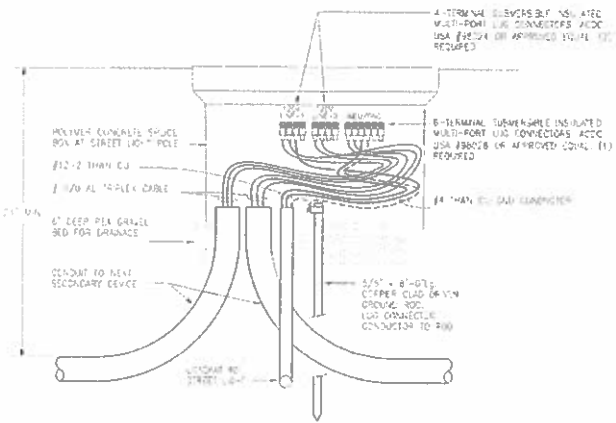
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FEDERAL BLD. RECON - 5th AVE. TO HOWARD PLACE ELECTRICAL SCHEDULES

10-10-10-10-10-10-10-10

Project No./Code

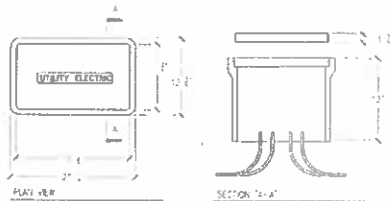
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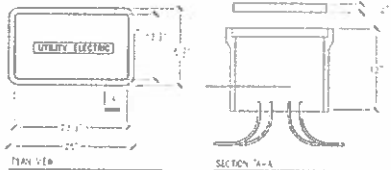
STREET LIGHT POLE AND SPLICE BOX NOTES:

- 1. 4-TERMINAL ELEVATORS NOT REQUIRED. INSULATED MULTI-PORT LUG CONNECTORS ACCO USA #18224 OR APPROVED EQUAL. (1) REQUIRED.
- 2. 6-TERMINAL SURGE-FREE INSULATED MULTI-PORT LUG CONNECTORS ACCO USA #18224 OR APPROVED EQUAL. (1) REQUIRED.
- 3. 1/2" THICK CONCRETE SPLICE BOX AT STREET LIGHT POLE.
- 4. #12-2 THHN CU.
- 5. 1/2" AL TRIPLEX CABLE.
- 6. 6" DEEP PEA GRAVEL BED FOR DRAINAGE.
- 7. CONDUIT TO HEAT SECONDARY DEVICE.
- 8. 5/8" x 8" CUPPER CLAD OR VINYL GROUND ROD.
- 9. #4 THHN CU CONDUCTOR.

STREET LIGHT POLE'S SPLICE BOX DETAIL 3
NOT TO SCALE



SMALL SPLICE BOX DETAIL SYMBOLS = [Symbol] & [Symbol] 1
NOT TO SCALE



LARGE SPLICE BOX DETAIL SYMBOL = [Symbol] 2
NOT TO SCALE

SPLICE BOX SHALL BE QUARTZ COMPOSITE BOX WITH OPEN BASE (CAT NO. #210571) AND QUARTZ COMPOSITE EXTRA HEAVY DUTY TRAFFIC RATED COVER (CAT NO. #210572) OR APPROVED EQUAL. LABEL: "UTILITY ELECTRIC" OR "ELECTRIC".



| <p>811 Know what's below. Call before you dig.</p> | <p>Sheet Revisions</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Description</th> <th>By</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> | No. | Description | By | Date | | | | | <p>City and County of Denver Department of Public Works Engineering Bureau 201 W. Colfax, Suite 200 Denver, CO 80202</p> | <p>Colorado Department of Transportation Region 1</p> | <p>As Constructed</p> <p>12 Required 16 Issued 11 Deleted 700</p> | <p>FEDERAL BLVD. RECON - 5TH AVE. TO HOWARD PLACE LIGHTING & ELECTRICAL DETAILS</p> <p>Design: MC Structure Drawn: JEL 9/2/2016 Sheet 614 of 174</p> | <p>Project No./Code 11-PP-1825-12 SA 19567 301 - FEDERAL HIGHWAY DISTRICT Sheet Number 614</p> |
|--|--|-----|-------------|----|------|--|--|--|--|--|---|---|--|--|
| No. | Description | By | Date | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

AN SUPPLEMENT - JANUARY 2 2018

SUMMARY OF TRAFFIC ENGINEERING ITEMS

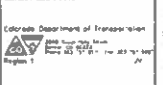
| ITEM NUMBER | ITEM DESCRIPTION | UNIT | PROJECT TOTALS |
|-------------|--|------|----------------|
| 282 | REMOVAL OF PAVEMENT MARKING | SF | 3,125 |
| 282 | REMOVAL OF GROUND SIGN | EACH | 24 |
| 282 | REMOVAL OF SIGN PANEL | EACH | 15 |
| 282 | REMOVAL OF TRAFFIC SIGNAL EQUIPMENT | L.S. | 1 |
| 218 | RESET GROUND SIGN | EACH | 1 |
| 218 | RESET SIGN PANEL | EACH | 17 |
| 218 | RESET VARIABLE MESSAGE SIGN | EACH | 1 |
| 218 | RESET TRAFFIC SIGNAL HEAD | EACH | 1 |
| 218 | RESET TRAFFIC SIGNAL POLE | EACH | 1 |
| 218 | RESET TRAFFIC SIGNAL CONTROLLER AND CABINET | EACH | 1 |
| 503 | DRILLED CAISSON 136 INCH | LF | 93 |
| 503 | DRILLED CAISSON 148 INCH | LF | 21 |
| 513 | 2 INCH ELECTRICAL CONDUIT (SCHED) | LF | 528 |
| 513 | 3 INCH ELECTRICAL CONDUIT (SCHED) | LF | 1,528 |
| 513 | 1 1/2 INCH ELECTRICAL CONDUIT (PLASTIC) | LF | 1,528 |
| 513 | PULL BOX 12" x 36" x 12" TYPE B (TRAFFIC) | EACH | 12 |
| 513 | PULL BOX (SPECIAL) | EACH | 8 |
| 513 | CONDUIT BLED KIT (800 TYPICAL) | EACH | 8 |
| 513 | WIRING | L.S. | 0.4 |
| 514 | SIGN PANEL (GLASS) | SF | 522 |
| 514 | STEEL SIGN POST (242 INCH TUBING) | LF | 564 |
| 514 | PEDESTRIAN SIGNAL FACE (18" x 20" x 0.04") | EACH | 18 |
| 514 | TRAFFIC SIGNAL FACE (12" x 12") | EACH | 18 |
| 514 | TRAFFIC SIGNAL FACE (12" x 12" x 1/2") | EACH | 4 |
| 514 | TRAFFIC SIGNAL CONTROLLER CABINET | EACH | 2 |
| 514 | PEDESTRIAN PUSH BUTTON | EACH | 8 |
| 514 | INTERSECTION DETECTOR SYSTEM (CAMERA) | EACH | 8 |
| 514 | 3-CHANNEL VEHICLE TRAFFIC SIGNAL CONTROL SYSTEM | EACH | 2 |
| 514 | TRAFFIC SIGNAL LIGHT POLE STEEL 11-30 FOOT HAST ALUM | EACH | 1 |
| 514 | TRAFFIC SIGNAL LIGHT POLE STEEL 11-48 FOOT HAST ALUM | EACH | 1 |
| 514 | TRAFFIC SIGNAL LIGHT POLE STEEL 11-50 FOOT HAST ALUM | EACH | 2 |
| 514 | TRAFFIC SIGNAL LIGHT POLE STEEL 11-55 FOOT HAST ALUM | EACH | 1 |
| 514 | TRAFFIC SIGNAL LIGHT POLE STEEL 11-60 FOOT HAST ALUM | EACH | 3 |
| 514 | TRAFFIC SIGNAL PEDESTAL POLE STEEL | EACH | 1 |
| 514 | TELEMETRY FIELD | EACH | 3 |
| 514 | TRAFFIC SIGNAL CONTROLLER (SOLID STATE) FULL ACLATED 12 PHASE | EACH | 2 |
| 514 | 12 FIBER OPTIC CABLE | L.S. | 1 |
| 514 | 12ER OPTIC CABLE (SPECIAL) | LF | 3,092 |
| 514 | CLOSED CIRCUIT TELEVISION CAMERA | EACH | 1 |
| 514 | ELECTRIC METER (PEDESTAL) | EACH | 2 |
| 527 | PAVEMENT MARKING PAINT | QT | 1,150 |
| 527 | PAVEMENT MARKING PAINT | QAL | 150 |
| 527 | RAISED PAVEMENT MARKER | EACH | 41 |
| 527 | PREFORMED THERMOPLASTIC PAVEMENT MARKING (68 MILI (VNO SYMBOL) | SF | 258 |
| 527 | PREFORMED THERMOPLASTIC PAVEMENT MARKING (68 MILI (VNO SYMBOL) | SF | 2,521 |
| 527 | PREFORMED THERMOPLASTIC PAVEMENT MARKING (68 MILI (VNO SYMBOL) | SF | 2,582 |
| 527 | PREFORMED THERMOPLASTIC PAVEMENT MARKING (TYPE III) (RAISED) | SF | 1,758 |
| 530 | PLACING | HOUR | 3,290 |
| 530 | UNIFORMED TRAFFIC CONTROL | HOUR | 80 |
| 530 | TRAFFIC CONTROL INSPECTION | DAY | 171 |
| 530 | TRAFFIC CONTROL MANAGEMENT | DAY | 429 |
| 530 | BARRETTAGE (TYPE 3) (TEMPORARY) | EACH | 16 |
| 530 | CONSTRUCTION TRAFFIC SIGN PANEL (SIZE A) | EACH | 33 |
| 530 | CONSTRUCTION TRAFFIC SIGN PANEL (SIZE B) | EACH | 97 |
| 530 | PORTABLE MESSAGE SIGN PANEL | EACH | 2 |
| 530 | ROADWAY MARKING (SCHED OR REDUCING SIGN PANEL) (TYPE C) | EACH | 2 |
| 530 | DRUM CHANNELIZING DEVICE | EACH | 253 |
| 530 | CONCRETE BARRIER (TEMPORARY) | LF | 1,800 |
| 530 | TRAFFIC CONE | EACH | 180 |
| 530 | IMPACT ATTENUATOR (TEMPORARY) | EACH | 2 |
| 530 | TRAFFIC SIGNAL (TEMPORARY) | EACH | 2 |
| 722 | FURNISH AND INSTALL ELECTRICAL SERVICE TO LOCATION | F.S. | 1 |



TSKOUVRAS HOLDERMESS
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List Modification Date: 1/18/18
Drawing File Name: 187185-704-ST2.dwg
Horizontal Scale: 1:2
Vertical Scale: As Noted

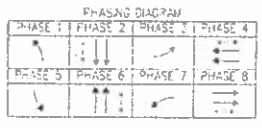
| Sheet Revisions | |
|-----------------|----------|
| Date | Comments |
| | |



As Constructed
No Revisions
Rev: 01
002

FEDERAL BLVD. RECON - 5TH AVE. TO HOWARD PLACE
SUMMARY OF TRAFFIC ENGINEERING QUANTITIES
Design: GPR Structures
Detail: GPR Structures
Sheet Count: 570 Sheet Sheets 1 of 1

Project No./Code
186P 2873-172
SA 19957
701-PROJ.USTR-0003364
Sheet Number: 700



NOTES

- SEE TRAFFIC SIGNAL GENERAL NOTES & SUMMARY OF QUANTITIES FOR ADDITIONAL NOTES AND SIGNAL LEAD SCHEDULE
- TRAFFIC SIGNAL CONTROLLER ITEM "00" SHALL BE CORNELL READY AUTOMATED CONTROLLER
- ITEM "00" - TRAFFIC SIGNAL CONTROLLER CABINET SHALL INCLUDE THE COST TO FURNISH AND INSTALL A NEW TRAFFIC SIGNAL CABINET BASE AND UNINTERRUPTED POWER SYSTEM

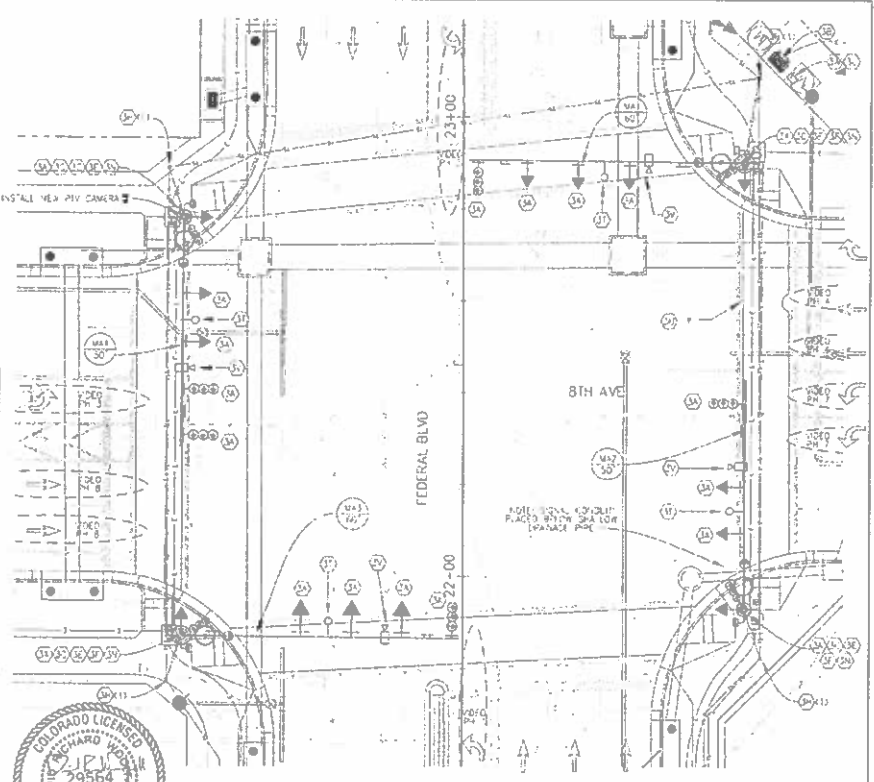
LEGEND

→ LANE USE (FOR MOTORISTS ONLY)

SUMMARY OF SIGNAL ITEMS (THIS SHEET ONLY)

| ITEM # | QTY | UNIT | DESCRIPTION | UNIT | QUANTITY |
|--------|-----|------|--|------|----------|
| 503 | N/A | | DRILLED CASSON (1/8" MC) | LF | 16 |
| 523 | N/A | | DRILLED CASSON (1/8" MC) | LF | 34 |
| 610 | (2) | | 2 W/4 ELECTRICAL CONDUIT (4000) | LF | 400 |
| 613 | (2) | | 3 W/4 ELECTRICAL CONDUIT (4000) | LF | 600 |
| 612 | (2) | | PULL BOX (24" x 36" x 12") - 1/2" STEEL | EA | 5 |
| 615 | (2) | | W/4 | LS | 32 |
| 611 | (2) | | LAMPWARE (LED) (14,000 LUMENS) | EA | 4 |
| 514 | (2) | | PEDESTRIAN SIGNAL (BASE) (CONTINGENT) | EA | 8 |
| 614 | (2) | | TRAFFIC SIGNAL FACE (12-12-12) | EA | 4 |
| 616 | (2) | | TRAFFIC SIGNAL FACE (12-12-12) | EA | 4 |
| 614 | (2) | | TRAFFIC SIGNAL CONTROLLER CABINET | EA | 2 |
| 614 | (2) | | PEDESTRIAN PUSH BUTTON | EA | 4 |
| 614 | (2) | | EMERGENCY VEHICLE TRAFFIC SIGNAL PRIORITY CONTROL SYSTEM | EA | 1 |
| 614 | (2) | | INTERSECTION DETECTION SYSTEM (CAMERA) | EA | 4 |
| 615 | (2) | | TRAFFIC SIGNAL (4-T POLE STEEL (1450 FOOT MAST) ARM) | EA | 2 |
| 616 | (2) | | TRAFFIC SIGNAL (4-T POLE STEEL (1450 FOOT MAST) ARM) | EA | 2 |
| 616 | (2) | | TRAFFIC SIGNAL CONTROLLER (50.0 STATE) (FULL-ACTUATED) (2 PHASE) | EA | 1 |
| 616 | (2) | | CABLED CIRCUIT TELEVISION CAMERA | EA | 1 |
| 614 | (2) | | POWER SIGNAL | EA | 1 |
| 614 | (2) | | ELECTRIC W/4 (PER INSTALL) | EA | 1 |
| 614 | (2) | | TELEMETRY FIELD | EA | 1 |

NOTE: ITEM (A) (LAMPWARE) ON SIGNAL POSTS TABULATED IN THESE PLANS, SEPARATE FROM LIGHTING PLANS
 FIBER (B) SHOWN FOR INFORMATION AND TABULATED ON OTHER SHEETS
 ITEM (C) TRAFFIC SIGNAL CONTROLLER CABINET SHALL INCLUDE CONTROLLER, BASE, AND UPS



SEE OTHER PLANS FOR LEGEND, APPENDICES

TSCUWARAS - SEBENS HOLDINGS
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Least Wood/Local or Sells: [blank]
 Drawing File Name: 1122181 - [blank] Signal Plans
 Horizontal Scale: 1" = 20'

Sheet Revisions

| Date | Comments | By |
|------|----------|----|
| | | |

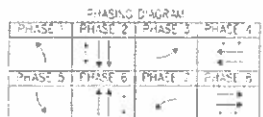


Colorado Department of Transportation
 Project 1

As Constructed
 No Remarks

FEDERAL BLVD. RECON - 8TH AVE. TO HOWARD PLACE
 TRAFFIC SIGNAL
 FEDERAL/8TH - PROPOSED TRAFFIC SIGNAL

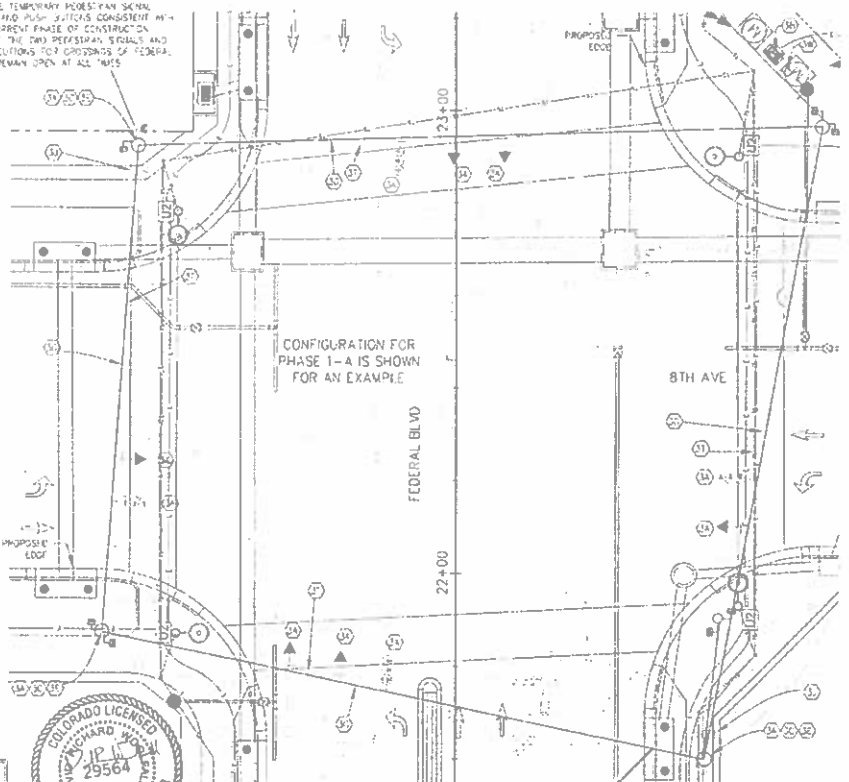
Project No./Code
 2011-FRD10513-050164
 Sheet Number: 703



PROVIDE TEMPORARY HOIST-PAN SIGNAL HEADS AND PUSH-BUTTONS CONSISTENT WITH THE CURRENT PHASE OF CONSTRUCTION. CARE OF THE TWO PEDESTRIAN SIGNALS AND PUSH-BUTTONS FOR CROSSINGS OF FEDERAL BLVD REMAIN OPEN AT ALL TIMES.

NOTES

- EXCEPT AS NOTED ON THESE PLANS, SEE CDD TRAFFIC STANDARDS DRAWINGS FOR KEY NOTES AND LOCATE THE CDD STANDARD DRAWINGS LISTED HEREIN IN THIS PLAN SET. THESE STANDARDS INCLUDE STREET AMPER SIGNALS AND PEDESTRIAN CROSSING SIGNALS.
- THE TEMPORARY SIGNAL POLES ON THIS SHEET ARE SUGGESTED LOCATIONS BASED ON THE BEST AVAILABLE SURVEY INFORMATION. THE TRAFFIC SIGNAL CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL FEATURES, INCLUDING ALL JOB MARKING AND ABOVE-GROUND UTILITIES. EXISTING AND PROPOSED CDD IS INSTALLED TEMPORARY SIGNAL EQUIPMENT.
- IT IS ANTICIPATED THAT THE PERMANENT TRAFFIC INTERSECTION IS IN PROGRESS AND USED FOR THIS TEMPORARY SIGNAL. THE TRAFFIC COMBINATIONS SHALL BE PROTECTED AND MONITORED DURING CONSTRUCTION.
- THE TEMPORARY SPAN WIRE SIGNAL SHALL CONFORM TO THE REQUIREMENTS OUTLINED IN THE SPECIFICATIONS AND IN THE RULES. A MINIMUM OF ONE TRAFFIC SIGNAL HEAD SHALL BE PROVIDED FOR EACH LEFT-TURN LANE AND EACH THROUGH LANE. PEDESTRIAN PUSH-BUTTONS AND PEDESTRIAN SIGNAL HEADS AS SPECIFIED BY THE ENGINEER AND THE CITY AND COUNTY OF DENVER SHALL BE PROVIDED AS PART OF THIS INSTALLATION.
- SEE EXISTING SIGNAL PLAN FOR REMOVAL ITEMS AND SEE FINAL SIGNAL PLAN FOR LOCATIONS OF PROPOSED SIGNAL EQUIPMENT.
- ALL ITEMS NOT SHOWN IN THE LIST OF QUANTITIES SHALL BE CONSIDERED INCIDENTAL TO THE TRAFFIC SIGNAL INSTALLATION AND WILL NOT BE MEASURED AND PAID FOR SEPARATELY.
- CONTACT TRAFFIC SIGNALING AT 330.865.3023 AT CDD TRAFFIC OPERATIONS 30 CALENDAR DAYS PRIOR TO SIGNAL WIRE INSTALLATION TO REQUEST A TRAFFIC SIGNAL TRUCK WORK ORDER.
- CROSSROAD SIGNAL HEADS ON SPAN WIRE SHALL BE LIGHT HEIGHT. SIGNAL HEAD LOCATIONS SHALL BE ADJUSTED THROUGHOUT CONSTRUCTION TO FIT TO THE LANE ALIGNMENTS USED DURING PHASING. ALL SIGNAL HEADS WORK FOR DIFFERENT PHASES SHALL BE LOCATED IN THE WORK AND NOT PAID FOR SEPARATELY.
- DURING SIGNAL OUTAGES, DOWNLINES AND CHANGE-OVER, THE CONTRACTOR SHALL PROVIDE ADEQUATE TRAFFIC CONTROL UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- CONTRACTOR MAY INSTALL SOME PERMANENT SIGNAL EQUIPMENT AND REMOVE ITS USE WITH TEMPORARY SIGNAL EQUIPMENT FOR THE PHASES REPERMITS FOR THE SIGNAL.



LEGEND

→ LANE USE (FOR INFORMATION ONLY)



INDICATIONS OF TEMPORARY SIGNALS (THIS SHEET ONLY)

| NO. | DETAILED KEY | DESCRIPTION | UNIT | QUANTITY |
|-----|--------------|----------------------------|-------|----------|
| 830 | (Symbol) | TRAFFIC SIGNAL (TEMPORARY) | FEACH | 7 |



TSOUVARAS HOLDERS/ESS

Last Modification Date: 01/12/18
 Drawing File Name: 3011B-TR-1016-Sign-Phase
 Horizontal Scale: 1:20

Sheet Revisions

| Date | Comments | By |
|------|----------|----|
| | | |

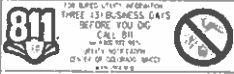


Colorado Department of Transportation
 Region 1

As Constructed
 No Proposals
 Pending

FEDERAL BLVD. RECON - 5TH AVE. TO HOWARD PLACE
 TRAFFIC SIGNAL
 FEDERAL/8TH - TEMPORARY TRAFFIC SIGNAL

Project No./Code
 3011-BRD-MSTR-20003344
 5A 13957
 704



NOTES

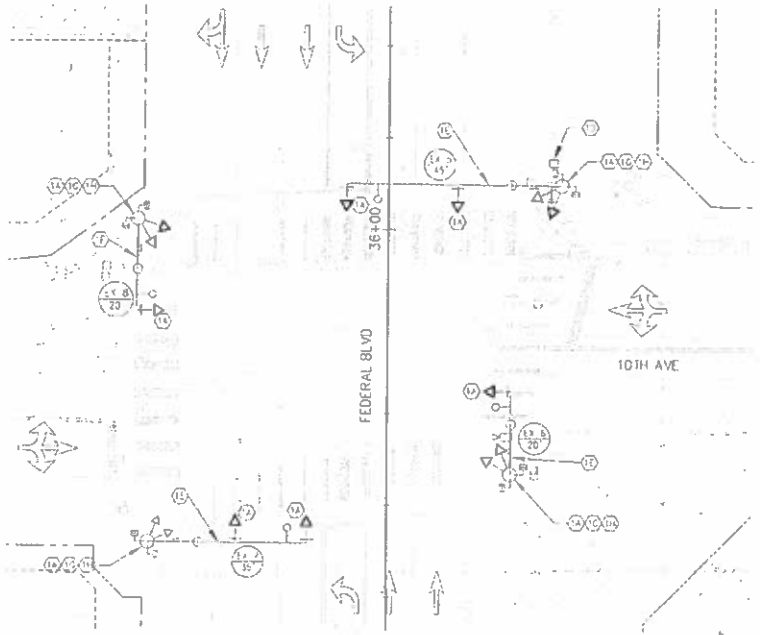
1. SEE TRAFFIC SIGNAL GENERAL NOTES & SUMMARY OF QUANTITIES FOR ADDITIONAL NOTES.
2. CONTRACTOR SHALL COORDINATE REMOVAL OF THE TRAFFIC SIGNAL EQUIPMENT WITH THE CONSTRUCTION PHASING AND WITH THE INSTALLATION OF A TEMPORARY TRAFFIC SIGNAL.
3. DURING SIGNAL OUTAGES, DOWNSTAIRS, AND CHANGEOVERS, THE CONTRACTOR SHALL PROVIDE "JUMP" TRAFFIC CONTROL.
4. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE EXISTING AND PROPOSED POWER SOURCE LOCATIONS WITH KCEI ENERGY. THIS REQUIREMENT INCLUDES POWER SOURCE LOCATIONS FOR THE TEMPORARY SIGNAL AND FOR THE ULTIMATE FINAL EQUIPMENT. THE KCEI ENERGY CONTACT PERSON IS 876.22.0400, 303-571-3124.

LEGEND

→ LANE USE (FOR INFORMATION ONLY)

MODIFICATION OF QUANTITY (THIS SHEET ONLY)

| DD ITEM | DESCRIPTION | UNITS | QUANTITY |
|---------|--|-------|----------|
| 202 | EX-EXISTING TO REMOVAL OF TRAFFIC SIGNAL EQUIPMENT | EQ | 0.5 |



Local Modification Title: _____
 Drawing File Name: 1402198-2014-10th's Signal Phasing
 Revision: Scale: As noted

| Sheet Revisions | |
|-----------------|----------|
| Date | Comments |
| | |

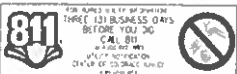


Colorado Department of Transportation
 Region 4

As Constructed
 No. Revisions: _____
 Revisions: _____

FEDERAL BLVD RECON - 5TH AVE TO HOWARD PLACE
 FEDERAL/10TH - EXISTING TRAFFIC SIGNAL

Project No./Code
 NHP# 2873-172
 SA 19957
 TEL: (303) 461-3000
 E-mail: _____
 Sheet Number: 705

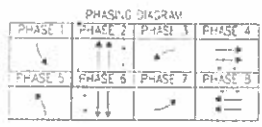


LEGEND
 → LINE USE FOR INFORMATION ONLY

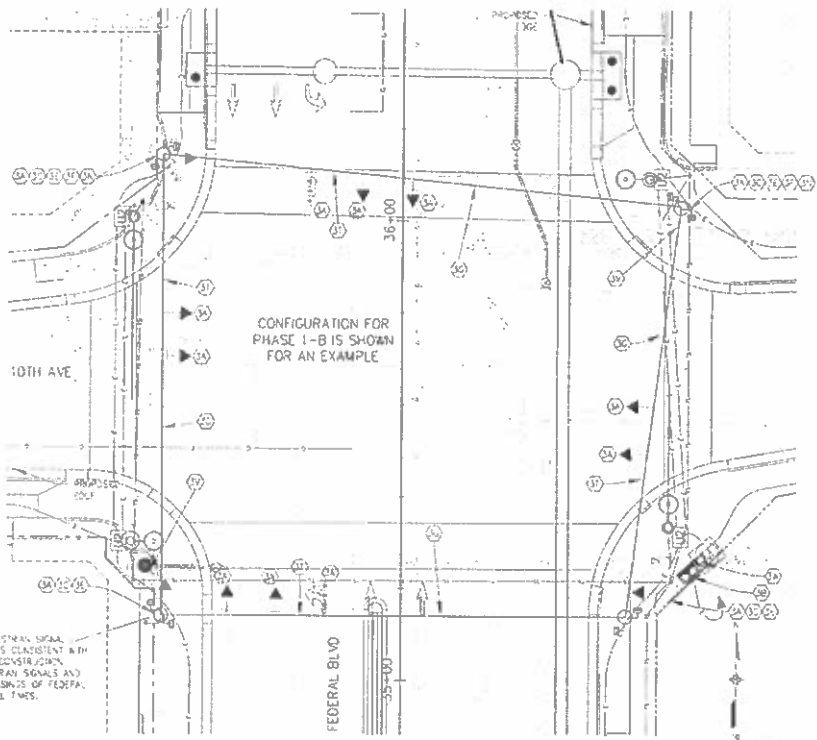
- EXCEPT AS NOTED ON THESE PLANS, SET OUT TRAFFIC STANDARD SPECIFICATIONS FOR ALL NOTES AND LEGEND THE C.E.D. STANDARD DRAWINGS AND TO BE USED IN THIS PLAN SET. THESE STANDARDS INCLUDE STREET NAMES, SIGNS AND PEDESTRIAN CROSSING SIGNS.
- THE TEMPORARY SPAN WIRE POLES ON THIS SHEET ARE SUGGESTED LOCATIONS BASED ON THE BEST AVAILABLE SURVEY INFORMATION. THE TRAFFIC SIGNAL CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL FEATURES, INCLUDING ALL UNDERGROUND AND ABOVE GROUND UTILITIES - EXISTING AND PROPOSED PRIOR TO INSTALLING TEMPORARY SIGNAL EQUIPMENT.
- IT IS ANTICIPATED THAT THE PERMANENT FIBER OPTIC INTERCONNECT IS IN PLACE AND USED FOR THIS TEMPORARY SIGNAL. THE FIBER CONNECTIONS SHALL BE PROTECTED AND MAINTAINED DURING CONSTRUCTION.
- THE TEMPORARY SPAN WIRE SIGNAL SHALL CONFORM TO THE REQUIREMENTS OUTLINED IN THE SPECIFICATIONS AND IN THE MANUAL A PORTION OF THE TRAFFIC SIGNAL HEAD SHALL BE PROVIDED FOR EACH LEFT TURN LANE AND EACH THROUGH-LANE PEDESTRIAN, BICYCLE AND PEDESTRIAN SIGNAL HEADS, AS DIRECTED BY THE ENGINEER AND THE CITY AND COUNTY OF DENVER SHALL BE PROVIDED AS PART OF THIS INSTALLATION.
- SEE EXISTING SIGNAL PLAN FOR REMOVAL ITEMS AND SEE TRAFFIC SIGNAL PLAN FOR LOCATIONS OF PROPOSED SIGNAL EQUIPMENT.
- ALL ITEMS NOT SHOWN IN THE LIST OF QUANTITIES SHALL BE CONSIDERED INCIDENTAL TO THE TRAFFIC SIGNAL INSTALLATION AND WILL NOT BE MEASURED AND PAID FOR SEPARATELY.
- CONTACT DATA SHOWN AT 270 265-3001 AT C.E.D. TRAFFIC DEPARTMENT 50 CALENDAR DAYS PRIOR TO SPAN WIRE INSTALLATION TO REQUEST A TRAFFIC SIGNAL TAMPON WORK ORDER.
- OVERHEAD SIGNAL HEADS ON SPAN WIRE SHALL BE 10-FOOT TALL. SIGNAL HEAD LOCATIONS SHALL BE ADJUSTED THROUGHOUT CONSTRUCTION TO FIT TO THE LINE REQUIREMENTS USED DURING PHASING. ALL SIGNAL HEADS BEING FOR DIFFERENT PHASES SHALL BE ACQUIRED IN THE 400A AND 430 PAQ FOR SEPARATELY.
- ALL SIGNAL, OUTPUTS, DEVICES AND CHANGES TO THE CONTRACTOR SHALL PROVIDE ADEQUATE TRAFFIC CONTROL UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- CONTRACTOR MAY INSTALL SOME PERMANENT SIGNAL EQUIPMENT AND COMBINE IT USE WITH TEMPORARY SIGNAL EQUIPMENT FOR THE PHASED IMPLEMENTATION OF THE SIGNAL.

LOCATION OF TEMPORARY SIGNAL HEADS AND QUANTITIES

| ITEM | DENVER KEY | DESCRIPTION | UNITS | QUANTITY |
|------|---|--------------------------|-------|----------|
| 610 | (S) (A) (B) (C) (D) (E) (F) (G) (H) (I) (J) (K) (L) (M) (N) (O) (P) (Q) (R) (S) (T) (U) (V) (W) (X) (Y) (Z) | TRAFFIC SIGNAL TEMPORARY | HEAD | 1 |



PROVIDE TEMPORARY PEDESTRIAN SIGNAL HEADS AND PUSH BUTTONS CONSISTENT WITH THE CURRENT PHASE OF CONSTRUCTION. ONE OF THE TWO PEDESTRIAN SIGNALS AND PUSH BUTTONS FOR CROSSINGS OF FEDERAL MUST REMAIN OPEN AT ALL TIMES.



SEE OTHER PLANS FOR ADDITIONAL INFORMATION

1500 LARSEN STREET, DENVER, CO 80202
 (303) 733-1100

100% Construction Date: 01/18/18
 Drawing File Name: 112118-101-1-1010 Signal Plans.dwg
 Horizontal Scale: 1"=20'

Sheet Revisions

| Date | Comments | By |
|------|----------|----|
| | | |

City and County of Denver
 Department of Public Works
 Engineering Group
 200 N. Dearborn Street
 Denver, CO 80202

Colorado Department of Transportation
 1000 North Downing Street
 Denver, CO 80202
 Region 1

As Constructed
 No Revisions
 Approved: [Signature]
 Date: 01/18/18

FEDERAL BLVD. RECON. - 5TH AVE. TO HOWARD PLACE
 TRAFFIC SIGNAL
 FEDERAL/10TH - TEMPORARY TRAFFIC SIGNAL

Project No./Code
 NIPP 2873-172
 SA 19557
 2017-2018 US 100302164
 Sheet No./Total: 707

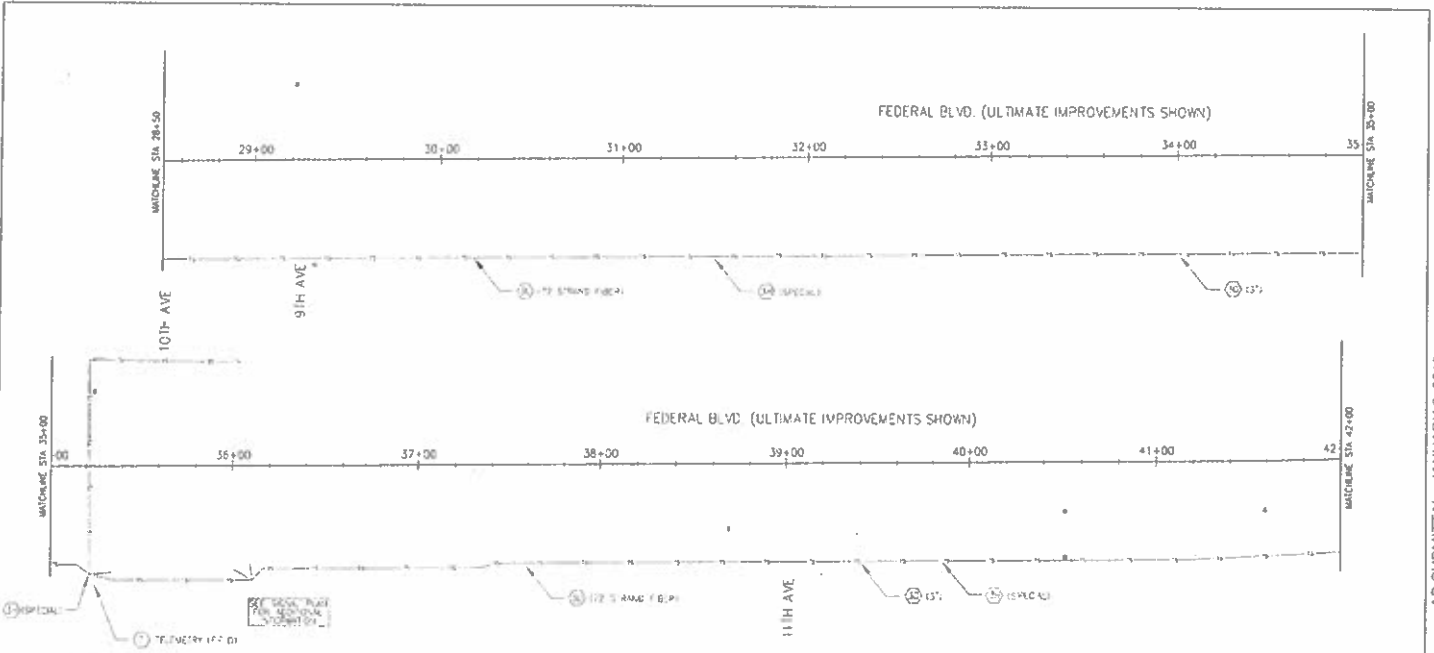


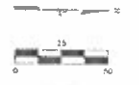
TABLE A - LIST OF ITEMS (THIS SHEET ONLY)

| ITEM NO. | QUANTITY | DESCRIPTION | UNITS | QUANTITY |
|----------|----------|--------------------------------------|-------|----------|
| 80 | 1 | DELIVER KEY | | |
| 81 | 1 | 3" RHM ELECTRICAL CONDUIT (REPLACES) | LF | 1350 |
| 811 | 3 | PULLBOX (SPECIAL) | EA | 3 |
| 814 | 1500 | FIBER OPTIC CABLE (SPECIAL) | LF | 1500 |
| 811 | 24 | TELEMETRY (FIBER) | EA | 24 |



NOTES

1. THE TELEMETRY PAY ITEM INCLUDES SPECIAL PULLBOXES AT EACH CABINET CORNER AND AS CALLED OUT BY THE PLANS. FIBER SPINDLING, TERMINATION AND ALL TESTING FOR A COMPLETE AND OPERATIONAL SYSTEM PRIOR TO BEGAINING THE WORK. THE CONTRACTOR SHALL SCHEDULE A MEETING WITH C.O.D. TRAFFIC OPERATIONS TO DISCUSS THE COMMUNICATIONS WORK.
2. THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL FEATURES INCLUDING ALL UNDERGROUND AND ABOVE GROUND UTILITIES PRIOR TO BEGAINING ANY WORK.
3. 52' FIBER SHALL BE COILED IN EACH PULLBOX AND 10' IN EACH CABINET.



TSIDUYARAS HOLDERSNESS
SEAL OF THE STATE

Scale: Not to Scale
 Drawing File Name: 2018-01-05-10th-11th-12th-13th-14th-15th-16th-17th-18th-19th-20th-21st-22nd-23rd-24th-25th-26th-27th-28th-29th-30th-31st-32nd-33rd-34th-35th-36th-37th-38th-39th-40th-41st-42nd-43rd-44th-45th-46th-47th-48th-49th-50th-51st-52nd-53rd-54th-55th-56th-57th-58th-59th-60th-61st-62nd-63rd-64th-65th-66th-67th-68th-69th-70th-71st-72nd-73rd-74th-75th-76th-77th-78th-79th-80th-81st-82nd-83rd-84th-85th-86th-87th-88th-89th-90th-91st-92nd-93rd-94th-95th-96th-97th-98th-99th-100th-101st-102nd-103rd-104th-105th-106th-107th-108th-109th-110th-111th-112th-113th-114th-115th-116th-117th-118th-119th-120th-121st-122nd-123rd-124th-125th-126th-127th-128th-129th-130th-131st-132nd-133rd-134th-135th-136th-137th-138th-139th-140th-141st-142nd-143rd-144th-145th-146th-147th-148th-149th-150th-151st-152nd-153rd-154th-155th-156th-157th-158th-159th-160th-161st-162nd-163rd-164th-165th-166th-167th-168th-169th-170th-171st-172nd-173rd-174th-175th-176th-177th-178th-179th-180th-181st-182nd-183rd-184th-185th-186th-187th-188th-189th-190th-191st-192nd-193rd-194th-195th-196th-197th-198th-199th-200th-201st-202nd-203rd-204th-205th-206th-207th-208th-209th-210th-211st-212nd-213th-214th-215th-216th-217th-218th-219th-220th-221st-222nd-223rd-224th-225th-226th-227th-228th-229th-230th-231st-232nd-233rd-234th-235th-236th-237th-238th-239th-240th-241st-242nd-243rd-244th-245th-246th-247th-248th-249th-250th-251st-252nd-253rd-254th-255th-256th-257th-258th-259th-260th-261st-262nd-263rd-264th-265th-266th-267th-268th-269th-270th-271st-272nd-273rd-274th-275th-276th-277th-278th-279th-280th-281st-282nd-283rd-284th-285th-286th-287th-288th-289th-290th-291st-292nd-293rd-294th-295th-296th-297th-298th-299th-300th-301st-302nd-303rd-304th-305th-306th-307th-308th-309th-310th-311st-312nd-313th-314th-315th-316th-317th-318th-319th-320th-321st-322nd-323rd-324th-325th-326th-327th-328th-329th-330th-331st-332nd-333rd-334th-335th-336th-337th-338th-339th-340th-341st-342nd-343rd-344th-345th-346th-347th-348th-349th-350th-351st-352nd-353rd-354th-355th-356th-357th-358th-359th-360th-361st-362nd-363rd-364th-365th-366th-367th-368th-369th-370th-371st-372nd-373rd-374th-375th-376th-377th-378th-379th-380th-381st-382nd-383rd-384th-385th-386th-387th-388th-389th-390th-391st-392nd-393rd-394th-395th-396th-397th-398th-399th-400th-401st-402nd-403rd-404th-405th-406th-407th-408th-409th-410th-411st-412nd-413th-414th-415th-416th-417th-418th-419th-420th-421st-422nd-423rd-424th-425th-426th-427th-428th-429th-430th-431st-432nd-433rd-434th-435th-436th-437th-438th-439th-440th-441st-442nd-443rd-444th-445th-446th-447th-448th-449th-450th-451st-452nd-453rd-454th-455th-456th-457th-458th-459th-460th-461st-462nd-463rd-464th-465th-466th-467th-468th-469th-470th-471st-472nd-473rd-474th-475th-476th-477th-478th-479th-480th-481st-482nd-483rd-484th-485th-486th-487th-488th-489th-490th-491st-492nd-493rd-494th-495th-496th-497th-498th-499th-500th-501st-502nd-503rd-504th-505th-506th-507th-508th-509th-510th-511st-512nd-513th-514th-515th-516th-517th-518th-519th-520th-521st-522nd-523rd-524th-525th-526th-527th-528th-529th-530th-531st-532nd-533rd-534th-535th-536th-537th-538th-539th-540th-541st-542nd-543rd-544th-545th-546th-547th-548th-549th-550th-551st-552nd-553rd-554th-555th-556th-557th-558th-559th-560th-561st-562nd-563rd-564th-565th-566th-567th-568th-569th-570th-571st-572nd-573rd-574th-575th-576th-577th-578th-579th-580th-581st-582nd-583rd-584th-585th-586th-587th-588th-589th-590th-591st-592nd-593rd-594th-595th-596th-597th-598th-599th-600th-601st-602nd-603rd-604th-605th-606th-607th-608th-609th-610th-611st-612nd-613th-614th-615th-616th-617th-618th-619th-620th-621st-622nd-623rd-624th-625th-626th-627th-628th-629th-630th-631st-632nd-633rd-634th-635th-636th-637th-638th-639th-640th-641st-642nd-643rd-644th-645th-646th-647th-648th-649th-650th-651st-652nd-653rd-654th-655th-656th-657th-658th-659th-660th-661st-662nd-663rd-664th-665th-666th-667th-668th-669th-670th-671st-672nd-673rd-674th-675th-676th-677th-678th-679th-680th-681st-682nd-683rd-684th-685th-686th-687th-688th-689th-690th-691st-692nd-693rd-694th-695th-696th-697th-698th-699th-700th-701st-702nd-703rd-704th-705th-706th-707th-708th-709th-710th-711st-712nd-713th-714th-715th-716th-717th-718th-719th-720th-721st-722nd-723rd-724th-725th-726th-727th-728th-729th-730th-731st-732nd-733rd-734th-735th-736th-737th-738th-739th-740th-741st-742nd-743rd-744th-745th-746th-747th-748th-749th-750th-751st-752nd-753rd-754th-755th-756th-757th-758th-759th-760th-761st-762nd-763rd-764th-765th-766th-767th-768th-769th-770th-771st-772nd-773rd-774th-775th-776th-777th-778th-779th-780th-781st-782nd-783rd-784th-785th-786th-787th-788th-789th-790th-791st-792nd-793rd-794th-795th-796th-797th-798th-799th-800th-801st-802nd-803rd-804th-805th-806th-807th-808th-809th-810th-811st-812nd-813th-814th-815th-816th-817th-818th-819th-820th-821st-822nd-823rd-824th-825th-826th-827th-828th-829th-830th-831st-832nd-833rd-834th-835th-836th-837th-838th-839th-840th-841st-842nd-843rd-844th-845th-846th-847th-848th-849th-850th-851st-852nd-853rd-854th-855th-856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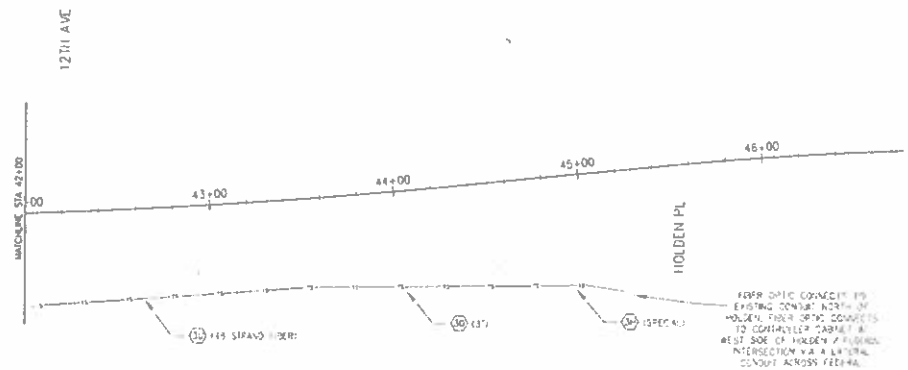


TABLE OF QUANTITIES THIS SHEET ONLY

| NO. | REVISION | DESCRIPTION | UNITS | QUANTITY |
|-----|----------|-----------------------------------|-------|----------|
| 613 | | 3" NON METALLIC CONDUIT (SPECIAL) | LF | 350 |
| 614 | | PULLBOX (SPECIAL) | EA | 1 |
| 614 | | FIBER OPTIC CABLE (SPECIAL) | LF | 350 |

NOTES

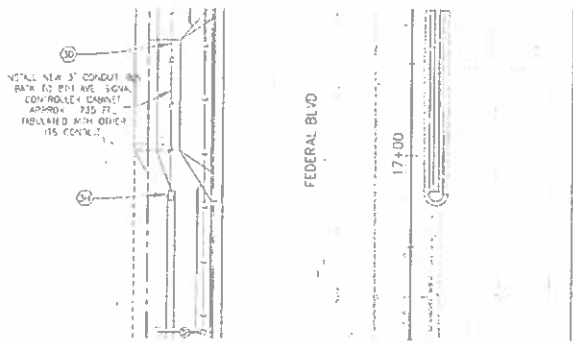
1. THE DELIVERY BY THE MANUFACTURER SHALL INCLUDE SPlice ENCLOSURES AT EACH CHANGE CORNER AND AS CALLED OUT ON THE PLANS. FIBER SPLICING, IDENTIFICATION AND ALL TESTING FOR A COMPLETE AND OPERATIONAL SYSTEM PRIOR TO BEGINNING THE WORK. THE CONTRACTOR SHALL SCHEDULE A MEETING WITH CDD, TRAFFIC OPERATIONS TO DISCUSS THE SEQUENCING OF WORK.
2. THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL FEATURES INCLUDING ALL UNDERGROUND AND ABOVE GROUND UTILITIES PRIOR TO BEGINNING ANY WORK.
3. 30' FIBER SHALL BE COILED IN EACH PULLBOX AND 10' IN EACH CABLE.



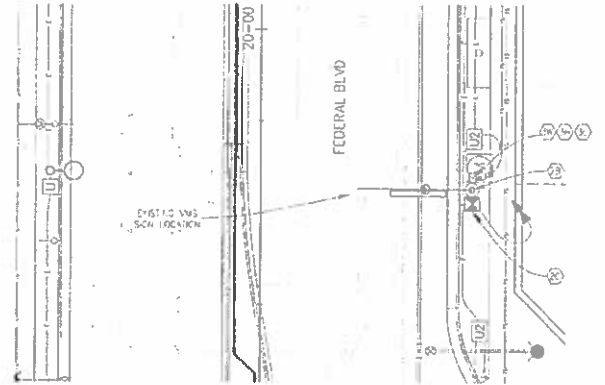
TSOUVARAS HOLDENNESS
SENIOR ENGINEER

| | | | | | |
|--|--|--|--|---|--|
| Last Modification Date: _____ Drawing File Name: T0162 12th Ave Traffic Signal Plan Horizontal Scale: 1"=50' | Sheet Revisions Date: _____ Comments: _____ | State of Colorado Department of Transportation Engineering Division 3015 Central Expressway Denver, CO 80202 | As Constructed No. Revisions: _____ Prepared: _____ Checked: _____ | FEDERAL BLVD. RECON. - 5TH AVE. TO 40WARD PLACE TRAFFIC SIGNAL TRAFFIC FIBER LAYOUT - 12TH AVE TO HOLDEN PL. Designer: _____ Checker: _____ Check Station: TRAFFIC SIGNAL 12TH AVE TO 40WARD PLACE | Project No./Code N-PP 2873 172 SA 19957 23 1-FRQJWS17-FCG2364 Sheet Number: 710 |
|--|--|--|--|---|--|

RESET OF INCIDENT MANAGEMENT BLANKOUT SIGN NEAR 774 AVENUE



RESET OF VARIABLE MESSAGE SIGN NEAR SEVEN AVENUE



- EXCEPT AS NOTED ON THESE PLANS SEE C.C.O. TRAFFIC STANDARD DRAWINGS FOR KEY NOTES AND LEGEND. THE C.C.O. STANDARD DRAWINGS "B" TO "S" ARE INCLUDED IN THIS PLAN SET.
- THE FLASHING BEACON SIGN AND PEDESTAL POLE SHALL BE RESET TO A NEW FOUNDATION AS SHOWN. A NEW PULL BOX SHALL BE INSTALLED ADJACENT TO THE PEDESTAL POLE FOUNDATION. ALL DEAD END TRAFFIC SIGN PULL BOX'S SHALL BE TYPE 3 AND PAD FOR AS PULL BOX 12' FROM THE ROAD TRAFFIC SHALL BE PHYSICALLY UNREACHABLE BY THE SUB.
- THE VARIABLE MESSAGE SIGN (VMS) SHALL BE RESET TO A NEW LIGHT POLE STANDARD WITH A 25 FT MAXIMUM. THE POLE WINDUP TELEPHONE CABLE SHALL ALSO BE RESET TO THE NEW POLE. A NEW POLE FOUNDATION AND A NEW POWER METER SHALL BE INSTALLED AS SHOWN. TWO NEW WALL BOXES SHALL BE INSTALLED ADJACENT TO THE SIGN LIGHT POLE FOUNDATION ONE TYPE 3 AND ONE TYPE A.
- BEFORE THE VMS SIGN IS REMOVED AND RESET, THE SIGN SHALL BE TESTED FROM THE TRAFFIC ALIGNMENT CENTER (TAC) TO VERIFY TO CITY FORCES AND THE CONTRACTOR THAT EVERYTHING IS IN A WORKING ORDER.
- THIS VARIABLE MESSAGE SIGN IS ALLOWED TO BE OUT OF SERVICE FOR UP TO 30 DAYS DURING THE RESET CONSTRUCTION.
- ALL NEW LOCATIONS INCLUDING THE SIGNAL FIXES, PULL BOXES AND CABINETS APPROXIMATE EXACT PLACEMENT SHALL BE DETERMINED IN THE FIELD BY THE CITY AND COUNTY OF DENVER PRIOR TO INSTALLATION.
- ALL ITEMS NOT SHOWN IN THE LIST OF QUANTITIES SHALL BE CONSIDERED INCIDENTAL TO THE RESET OF THE INCIDENT MANAGEMENT SIGN AND WILL NOT BE MEASURED AND PAID FOR SEPARATELY.
- CONTACT DENVER COUNTY AT 320-541-5439 AT C.C.O. TRAFFIC OPERATIONS TO OBTAIN DATE PRIOR TO CONSTRUCTION TO ARRANGE FOR CONSTRUCTION INSPECTION.
- UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL SUBMIT RECORD DRAWINGS CORRECTED PER ALL AND ANY ADDITIONAL DATA REQUIRED BY THE ENGINEER SHOWING IN DETAIL ALL CONSTRUCTION CHANGES TO THE CITY AND COUNTY OF DENVER.
- THE INCIDENT MANAGEMENT BLANKOUT SIGN IS ALLOWED TO BE OUT OF SERVICE FOR UP TO 30 DAYS DURING THE RESET CONSTRUCTION.

INSTALLATION OF SIGNAL ITEMS (THIS SHEET ONLY)

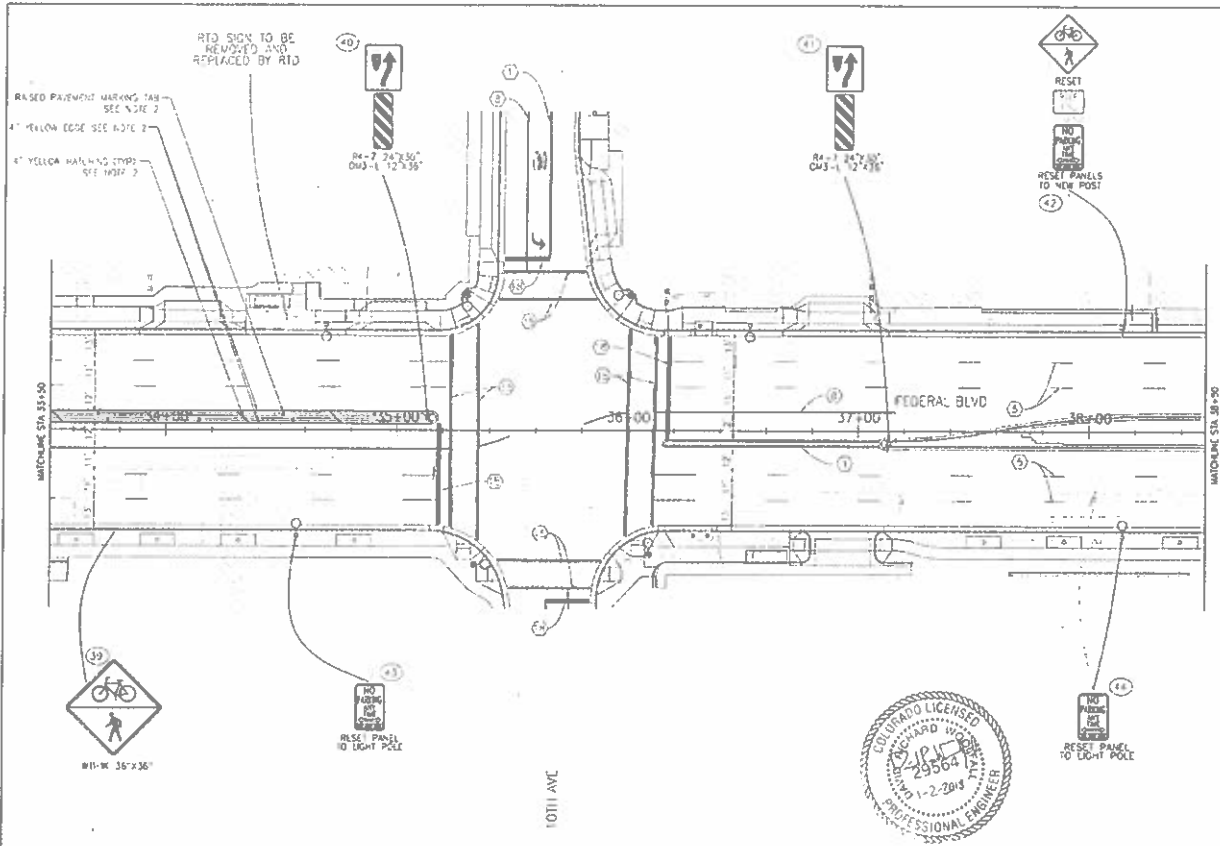
| ITEM NO. | DENVER #ES | DESCRIPTION | UNITS | QUANTITY |
|----------|------------|---|-------|----------|
| 210 | 210 | RESET TRAFFIC SIGNAL POLE | EA | 1 |
| 210 | N/A | RESET VMS SIGN | EA | 1 |
| 210 | 210 | RESET TRAFFIC SIGNAL CONTROLLER AND CABINET | EA | 1 |
| 503 | N/A | DRILLED CASSONETTS (36 INCH) | FT | 15 |
| 613 | 613 | FIXED BOX (24" x 36" x 12") - TYPE B (PERAFECT) | EA | 1 |
| 614 | N/A | INSULATOR (FIELD) | EA | 1 |
| 614 | 614 | ELECTRIC METER (PEDESTAL) | EA | 1 |
| 684 | 684 | FINISH SOURCE | EA | 1 |



TSOUVRAS & HOLDENNESS
CONSULTANTS

| <p>LIST THE NAME OF THE SHEET REVISIONS</p> <table border="1"> <thead> <tr> <th>Date</th> <th>Comments</th> <th>By</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> | Date | Comments | By | | | | <p>CITY AND COUNTY OF DENVER Department of Public Works Engineering Division 220 S. CORNER, SUITE 1000 DENVER, CO 80202</p> | <p>Colorado Department of Transportation 1535 W. 10TH AVENUE, SUITE 200 DENVER, CO 80202 Phone: 303.733.4000 Fax: 303.733.4000</p> | <p>As Constructed No Revisions Revised VMS</p> | <p>FEDERAL BLVD. RECON. - SEVEN AVENUE TO HOWARD PLACE TRAFFIC SIGNAL ITS LAYOUT</p> <p>Designer: DTS Checker: DTS Scale: TRAFFIC</p> | <p>Project No./Coche 4-PK 2873 122 SA 17957 2017 PROJ. U.S.A. 0006184 SHEET NUMBER 711</p> |
|--|----------|----------|----|--|--|--|---|--|--|---|--|
| Date | Comments | By | | | | | | | | | |
| | | | | | | | | | | | |

AD SUBMITTAL - JANUARY 2, 2018



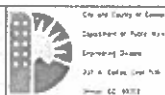
- LEGEND**
- ① 4" DOUBLE YELLOW CENTERLINE
 - ② 4" SOLID YELLOW CENTERLINE
 - ③ 4" SOLID YELLOW EDGE LINE
 - ④ 4" SOLID YELLOW EDGE LINE WITH 4" SUB-YELLOW
 - ⑤ 4" WHITE EDGE LINE
 - ⑥ 4" SOLID WHITE EDGE LINE
 - ⑦ 4" SOLID WHITE EDGE LINE WITH 4" SUB-YELLOW
 - ⑧ 4" SOLID WHITE EDGE LINE WITH 4" SUB-YELLOW
 - ⑨ 4" SOLID WHITE EDGE LINE WITH 4" SUB-YELLOW
 - ⑩ 4" SOLID WHITE EDGE LINE WITH 4" SUB-YELLOW
 - ⑪ 4" SOLID WHITE EDGE LINE WITH 4" SUB-YELLOW
 - ⑫ 4" SOLID WHITE EDGE LINE WITH 4" SUB-YELLOW
 - ⑬ 4" SOLID WHITE EDGE LINE WITH 4" SUB-YELLOW
 - ⑭ 4" SOLID WHITE EDGE LINE WITH 4" SUB-YELLOW
 - ⑮ 4" SOLID WHITE EDGE LINE WITH 4" SUB-YELLOW
 - ⑯ 4" SOLID WHITE EDGE LINE WITH 4" SUB-YELLOW

- NOTES**
1. SEE TRAFFIC DETAILS SUBJECT FOR MORE DETAILS
 2. SEE SIGNING DETAIL FOR V. V. LANTABLE MEDANS



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

| Sheet Revisers | |
|----------------|----------|
| Date | Comments |
| | |
| | |

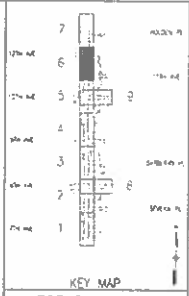
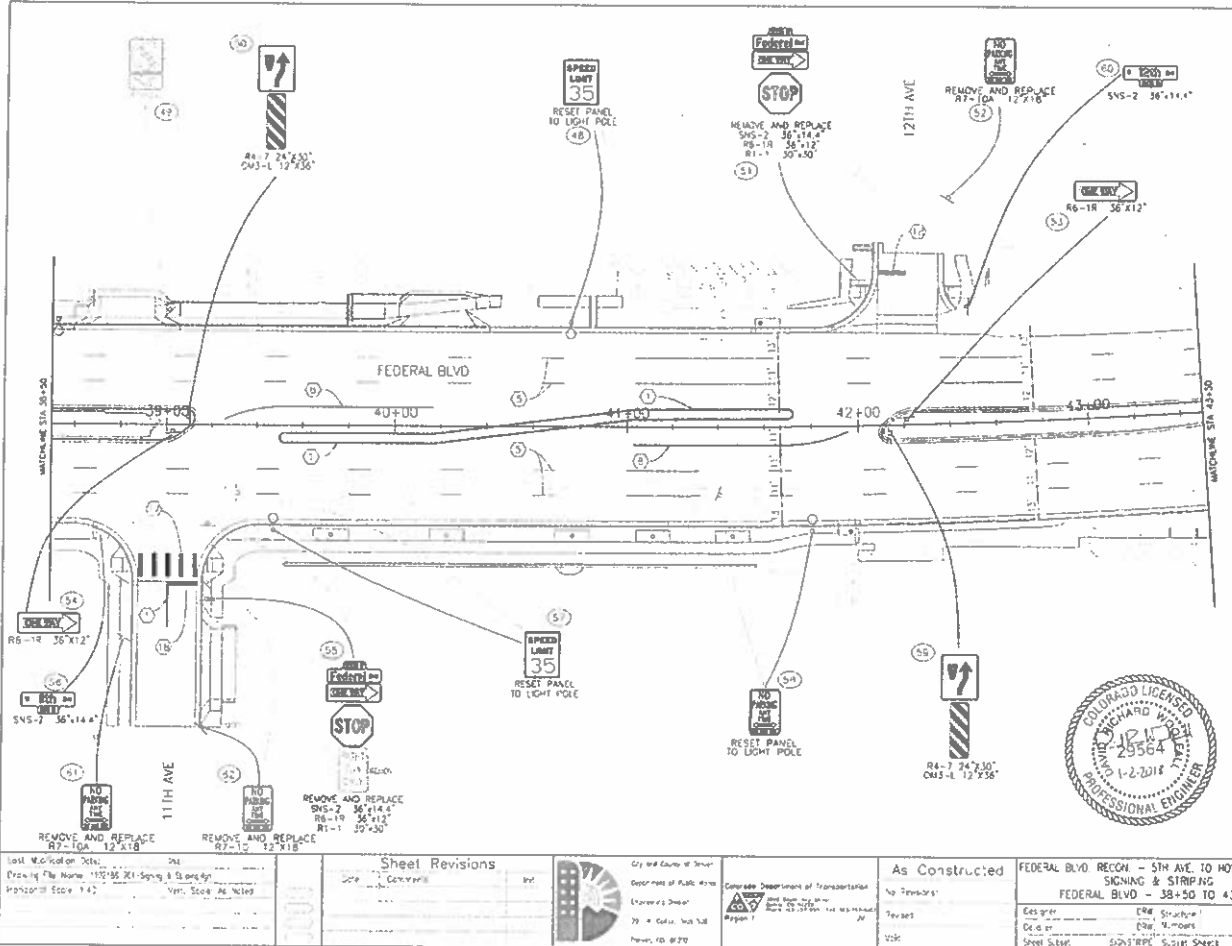


Colorado Department of Transportation
 Region 1
 1-2-2018

As Constructed
 No Revisions
 Revised
 No F

FEDERAL BLVD RECON - 5TH AVE. TO 10TH AVE PLACE
 SIGNING & STRIPING
 FEDERAL BLVD - 33+50 TO 38+50
 Designer: DPA Structure
 Checker: JLM
 Sheet Label: SIGNING & STRIPING, Sheet: 9 of 13

Project No./Code
 1670P 2872-172
 SA 19957
 2011-PROJ-MS1A-0000354
 Sheet Number: 759



- LEGEND**
- 1 4" DOUBLE YELLOW CENTERLINE
 - 2 4" SHIP YELLOW CENTERLINE
 - 3 4" SOLID YELLOW TWO WAY LEFT EDGE LINE
 - 4 4" SOLID YELLOW WITH 4" S&P YELLOW
 - 5 4" WHITE STOP LANE LINE (10' LONG, 30' GAP)
 - 6 4" SOLID WHITE RIGHT EDGE
 - 7 4" SOLID WHITE LEFT EDGE
 - 8 4" SOLID WHITE 45° DIAGONAL CROSSHATCH
 - 9 4" SOLID WHITE RIGHT EDGE 10' ON TURN LANE LINE
 - 10 4" DASHED WHITE (2'-10")
 - 11 4" (D-1) ROAD
 - 12 12" WHITE PAVEMENT CROSSWALK LINE
 - 13 24" x 10" WHITE CROSSWALK BAR
 - 14 24" WHITE STOP LINE WORD OR ARROW

- NOTES**
- 1 SEE TRAFFIC SIGNALS SHEET FOR MORE DETAILS
 - 2 SEE STRIPING DETAIL FOR 5 MARKABLE MEDIAN



last Modification Note:
 Drawing File Name: 150-36-201-Striping & Signage
 Inspector: Eddie T. [Name]
 Ver. Scale As Noted

| DATE | DESCRIPTION | BY |
|------|-------------|----|
| | | |

City and County of Denver
 Department of Public Works
 Engineering Division
 77 - Colfax, 1st Fl. S.W.
 Denver, CO 80202

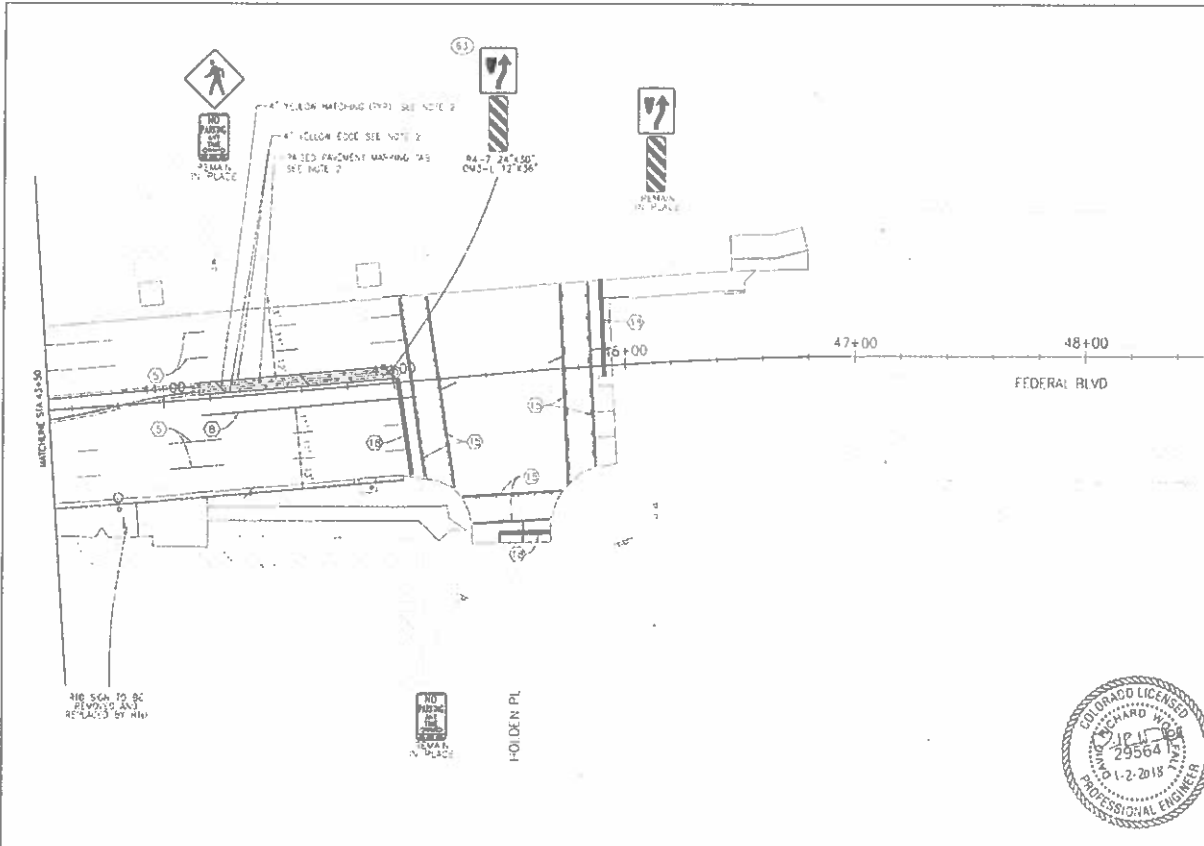
Colorado Department of Transportation
 1500 Sherman St., Suite 550
 Denver, CO 80202
 Project # 150-36-201

As Constructed
 No Revisions
 Revised
 VSB

FEDERAL BLVD RECON - 5TH AVE TO HOWARD PLACE
 SIGNING & STRIPING
 FEDERAL BLVD - 38+50 TO 43-50

Designer: [Name]
 Drafter: [Name]
 Sheet Scale: SNS/STPC Sheet Sheets 0 of 13

Project No./Code
 NWP 2875-72
 SA 9957
 2017-01000004-0000264
 Sheet Number 760



- LEGEND**
- ① 4" DOUBLE YELLOW CENTERLINE
 - ② 4" SOLID YELLOW CENTERLINE
 - ③ 4" SOLID YELLOW EDGE LINE
 - ④ 4" SOLID YELLOW WITH 4" SOLID YELLOW
 - ⑤ 4" WHITE SPID LANE LINE (10' MIN. SP. CAP)
 - ⑥ 4" SOLID WHITE RIGHT EDGE OR PARKING LANE LINE
 - ⑦ 4" SOLID WHITE 45° DIAGONAL CROSS-HATCH
 - ⑧ 4" SOLID WHITE RIGHT EDGE LINE WITH TURN LANE LINE
 - ⑨ 8" DASHED WHITE (2'-4" OR 3'-0" HEAD)
 - ⑩ 12" WHITE TRAVERSE CROSSWALK LINE
 - ⑪ 24" X 12" WHITE CROSSWALK BAR
 - ⑫ 74" WHITE STOP LINE
 - ⑬ 4" X 20" OR 4" X 30"

NOTES

- 1 SEE TRAFFIC DETAILS SUBJECT FOR MORE DETAILS
- 2 SEE STRIPING DETAIL FOR 1' MOUNTABLE MEDIANE

TSIOUYARAS & HOLDEN
CONSULTING ENGINEERS



Last Modification Date: 01/11/18
 Drawing File Name: 172111-721 Signing & Striping.dwg
 Horizontal Scale: 1" = 40'
 Vertical Scale: As Shown

| Date | Comments |
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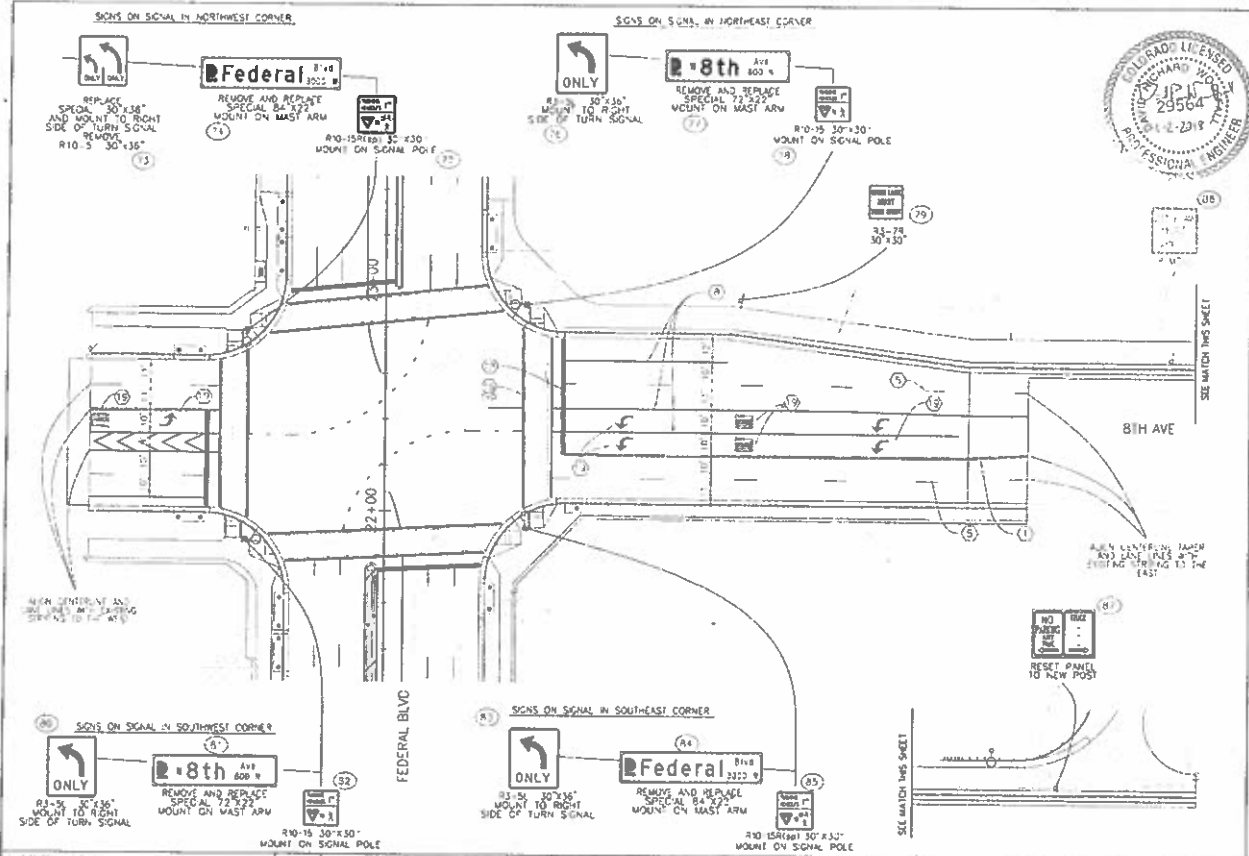
Colorado Department of Transportation
 As Constructed
 No Revisions
 Revised:
 Date:
 4/18

FEDERAL BLVD, RECON. - SIV AVE TO HOWARD PLACE
 SIGNING & STRIPING
 FEDERAL BLVD - 43+50 TO 48+50
 Designer: DPK Structure
 Checker: DPK Numbers
 Sheet Set: SIGN/PRE Submittal Sheets 11 of 13

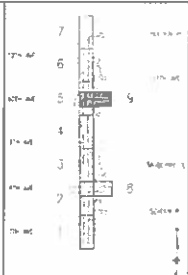
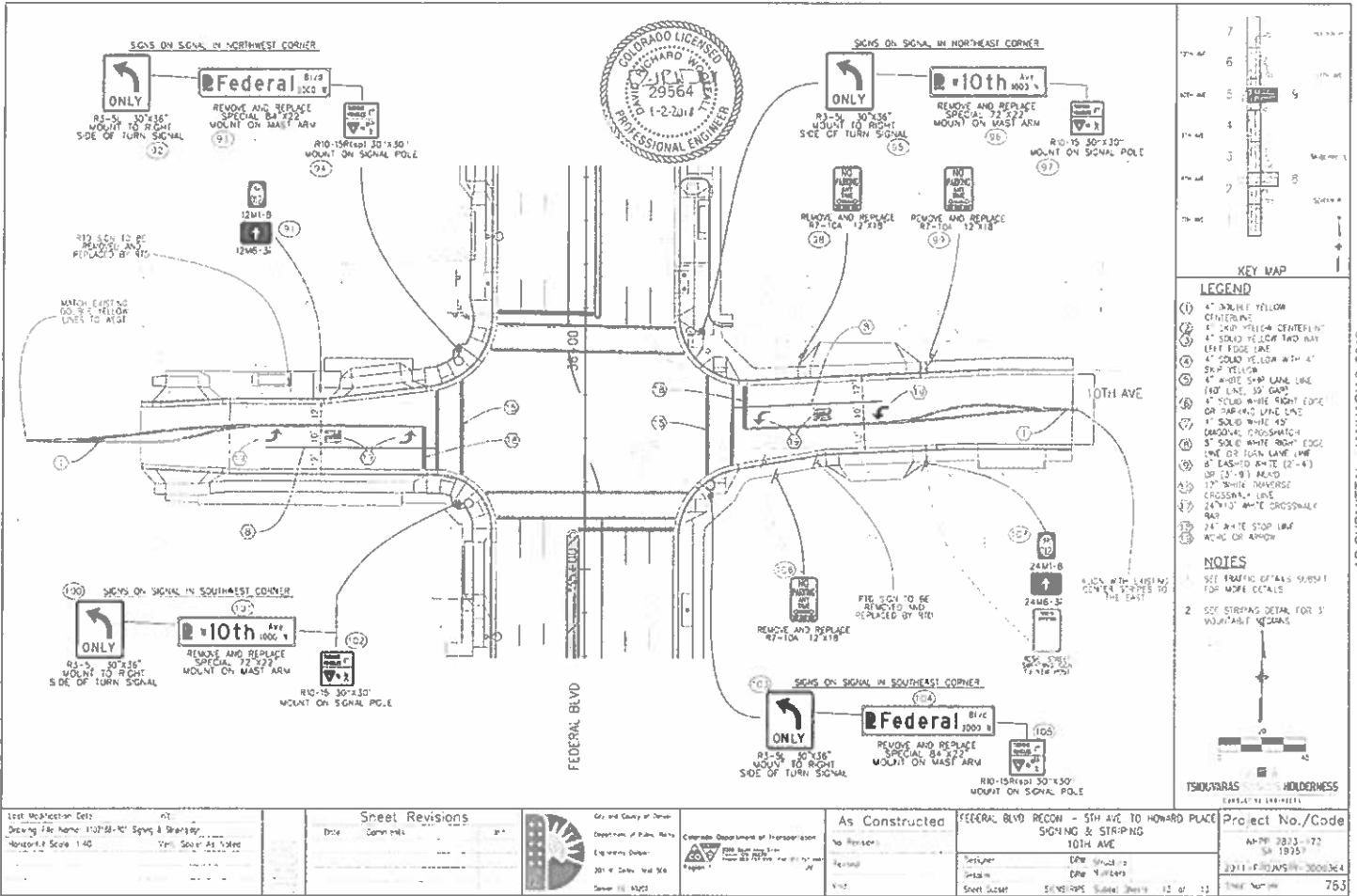
Project No./Code
 NRP 2873-172
 SA 19051
 2311-FR01/ST-4-G001/164
 Sheet Number: 761



- LEGEND**
- 1 4" DOUBLE YELLOW CENTERLINE
 - 2 4" SOLID YELLOW CENTERLINE
 - 3 4" SOLID YELLOW NO-PARK LEFT EDGE LINE
 - 4 4" SOLID YELLOW NO-PARK RIGHT EDGE LINE
 - 5 4" SOLID WHITE STOP LINE ON PARKING LANE LINE
 - 6 4" SOLID WHITE STOP LINE ON PARKING LANE LINE
 - 7 4" SOLID WHITE STOP LINE ON CROSSWALK
 - 8 4" SOLID WHITE STOP LINE ON TURN LANE LINE
 - 9 4" SOLID WHITE STOP LINE ON CROSSWALK
 - 10 4" SOLID WHITE STOP LINE ON TURN LANE LINE
 - 11 12" WHITE DOTTED CROSSWALK LINE
 - 12 24" WHITE DOTTED CROSSWALK LINE
 - 13 24" WHITE STOP LINE WIDE ON OFFICER
- NOTES**
- 1 SEE TRAFFIC DETAILS SHEET FOR WORK DETAILS
 - 2 SEE SIGNPOST DETAIL FOR MOUNTING HEIGHTS
- TSOURVARAS HOLDINGS INC. EXECUTIVE OFFICES



| <p>DATE: 11/15/17 DRAWN BY: J.P. K. CHECKED BY: J.P. K. PROJECT: FEDERAL BLVD RECON - 5TH AVE. TO HOWARD PLACE SHEET: 2 OF 2</p> | <p>Sheet Revisions</p> <table border="1"> <thead> <tr> <th>Date</th> <th>Comments</th> <th>By</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> | Date | Comments | By | | | | <p>City of Detroit Department of Public Works Engineering Division 225 N. State Street, 5th Floor Detroit, MI 48226</p> | <p>Michigan Department of Transportation 2200 Westland Road Westland, MI 48090</p> | <p>As Constructed</p> <p>No Revisions</p> <p>Revised: _____</p> <p>Void: _____</p> | <p>FEDERAL BLVD RECON - 5TH AVE. TO HOWARD PLACE SIGNING & STRIPING 8TH AVE</p> <p>Designer: DWR Checker: DWR Date: 11/15/17</p> | <p>Project No./Code 2873-172 SA 19937</p> <p>2311 - PROJWTR-0000224</p> <p>Sheet No. 762</p> |
|--|--|------|----------|----|--|--|--|---|--|---|--|--|
| Date | Comments | By | | | | | | | | | | |
| | | | | | | | | | | | | |



- LEGEND**
- ① 4" DOUBLE YELLOW CENTERLINE
 - ② 4" SOLID YELLOW CENTERLINE
 - ③ 4" SOLID YELLOW TWO WAY LEFT EDGE LINE
 - ④ 4" SOLID YELLOW WITH 4" SKIP YELLOW
 - ⑤ 4" WHITE SHOULDER LINE (40' LINE, 50' GAP)
 - ⑥ 4" SOLID WHITE RIGHT EDGE OR PARKING LINE (40' LINE OR 50' GAP)
 - ⑦ 4" SOLID WHITE 45° (CORNER) CROSSWALK
 - ⑧ 3" SOLID WHITE RIGHT EDGE LINE OR TURN LANE LINE
 - ⑨ 4" DASHED WHITE (2'-4") OR (3'-9") MARK
 - ⑩ 17" WHITE TRANSVERSE CROSSWALK LINE
 - ⑪ 24" X 30" WHITE CROSSWALK RAIL
 - ⑫ 24" WHITE STOP LINE MARK OR ARROW
- NOTES**
1. SEE TRAFFIC DETAILS SHEET FOR MORE DETAILS
 2. SEE STRIPING DETAIL FOR 3" MOUNTABLE MEDIAN
- TS/MS/VR/S: HOLDER/NESS
DATE: 11/14/17

| <p>East Workstation Data</p> <p>Drawing File Name: 170758-101 Striping & Striping</p> <p>Horizontal Scale: 1:40</p> <p>Vertical Scale: As Shown</p> | <p>Sheet Revisions</p> <table border="1"> <tr> <th>Date</th> <th>Comments</th> </tr> <tr> <td> </td> <td> </td> </tr> </table> | Date | Comments | | | <p>City and County of Denver</p> <p>Department of Public Works</p> <p>Engineering Division</p> <p>201 W. Colfax, 5th Fl.</p> <p>Denver, CO 80202</p> | <p>Colorado Department of Transportation</p> <p>2150 North Downing Street</p> <p>Denver, CO 80202</p> | <p>As Constructed</p> <p>No Revisions</p> <p>Revised</p> <p> </p> | <p>FEDERAL BLVD RECON - 5TH AVE TO HOWARD PLACE</p> <p>SIGNING & STRIPING</p> <p>10TH AVE</p> <p>Designer: DPE</p> <p>Checker: DPE</p> <p>Sheet Count: 51/51</p> | <p>Project No./Code</p> <p>ADP# 2013-172</p> <p>SA 19151</p> <p>2011 FIDIS# 3000364</p> <p>Sheet No. 753</p> |
|---|---|------|----------|--|--|--|---|--|---|---|
| Date | Comments | | | | | | | | | |
| | | | | | | | | | | |

SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL SIGNS - PHASES 1 - 4

| SIGN CODE | LEGEND | SIGN PANEL SIZE (INCHES) | PHASE 1A | | PHASE 1B | | PHASE 2 | | PHASE 3A | | PHASE 3B | | PHASE 3C | | PHASE 3D | | PHASE 3E | | PHASE 4 | | TOTAL | | | |
|----------------|---|--------------------------|------------|----|------------|----|------------|----|------------|----|------------|----|------------|----|------------|----|------------|----|------------|----|------------|----|------------|---|
| | | | PANEL SIZE | | PANEL SIZE | | PANEL SIZE | | PANEL SIZE | | PANEL SIZE | | PANEL SIZE | | PANEL SIZE | | PANEL SIZE | | PANEL SIZE | | PANEL SIZE | | PANEL SIZE | |
| | | | A | B | C | D | A | B | C | D | A | B | C | D | A | B | C | D | A | B | C | D | A | B |
| G22-10 | PAV. CONSTRUCTION MARKS YOU/555-555-555 | 36x36 | 6 | | 5 | | 6 | | 6 | | 6 | | 6 | | 6 | | 6 | | 6 | | 6 | | 6 | |
| R52-6B | END LANE DOUBLE/IN WORK ZONE | 24x36 | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | |
| W2-2 | NO LEFT TURN SYMBOL | 24x24 | 8 | | 8 | | 8 | | 8 | | 8 | | 8 | | 8 | | 8 | | 8 | | 8 | | 8 | |
| R28-5 | WORK ZONE | 24x12 | 5 | | 5 | | 5 | | 5 | | 5 | | 5 | | 5 | | 5 | | 5 | | 5 | | 5 | |
| R2-T-135 | SPEED LIMIT 75S | 24x36 | 5 | | 5 | | 5 | | 5 | | 5 | | 5 | | 5 | | 5 | | 5 | | 5 | | 5 | |
| W28-1 | ROAD WORK AHEAD | 36x36 | 14 | | 14 | | 14 | | 14 | | 14 | | 14 | | 14 | | 14 | | 14 | | 14 | | 14 | |
| R4-7 | KEEP RIGHT | 24x30 | 3 | | 3 | | 2 | | 1 | | 1 | | 1 | | 1 | | 1 | | 2 | | 3 | | 3 | |
| R9-3A | NO PEDESTRIANS | 24x24 | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | |
| R4-38P | USE CROSSWALK (RIGHT) | 18x12 | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | |
| R1-38L | USE CROSSWALK (LEFT) | 18x12 | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | |
| R52-6A | BECHTOLD'S DOUBLE/IN WORK ZONE | 24x36 | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | | 2 | |
| W28-5A | RIGHT LANE/CLOSED AHEAD | 36x36 | 1 | | 1 | | | | | | | | | | | | | | | | | | 1 | |
| W28-5A | LEFT LANE/CLOSED AHEAD | 36x36 | 1 | | 1 | | | | 2 | | 2 | | 2 | | 2 | | 2 | | | | | | 2 | |
| W4-2L | LEFT LANE ENDS | 36x36 | 1 | | 1 | | | | 2 | | 2 | | 2 | | 2 | | 2 | | | | | | 2 | |
| W4-2R | RIGHT LANE ENDS | 36x36 | 1 | | 1 | | | | 1 | | 1 | | 1 | | 1 | | 1 | | | | | | 1 | |
| W1-4BL | LEFT REVERSE CURVE (2 LANES) | 36x36 | 1 | | 1 | | | | 1 | | 1 | | 1 | | 1 | | 1 | | | | | | 1 | |
| W1-4BR | RIGHT REVERSE CURVE (2 LANES) | 36x36 | 2 | | 2 | | | | 1 | | 1 | | 1 | | 1 | | 1 | | | | | | 2 | |
| R11-2 | ROAD CLOSED | 48x24 | 3 | | 3 | | | | 3 | | 3 | | 3 | | 3 | | 3 | | | | | | 3 | |
| W20-5 | STREET CLOSED AHEAD | 36x36 | 1 | | 1 | | | | 1 | | 1 | | 1 | | 1 | | 1 | | | | | | 1 | |
| W13-F-125 | 25 MPH | 24x24 | 1 | | 1 | | | | | | | | | | | | | | | | | | 1 | |
| SPECIAL | BUSINESS ACCESS SIGN | 48x48 | 2 | | 2 | | | | 11 | | 11 | | 11 | | 11 | | 11 | | | | | | 11 | |
| PROJECT TOTALS | | | 33 | 43 | 33 | 45 | 28 | 22 | 29 | 39 | 29 | 33 | 29 | 36 | 29 | 41 | 29 | 28 | 28 | 28 | 33 | 37 | | |

SUMMARY OF TRAFFIC CONTROL ITEMS

| ITEM NUMBER | LEGEND | UNIT | PROJECT TOTALS |
|-------------|--|-------|----------------|
| 621 | DETOUR PAVEMENT | SY | 1,750 |
| 627 | PAVEMENT MARKING PAINT | GAL | 153 |
| 630 | FLAGGING | HOURS | 3,662 |
| 638 | UNIFORMED TRAFFIC CONTROL | HOURS | 82 |
| 638 | TRAFFIC CONTROL INSPECTION | DAY | 171 |
| 639 | TRAFFIC CONTROL MANAGEMENT | DAY | 424 |
| 639 | BARRIERS (TYPE 3 W-B) TEMPORARY | EACH | 16 |
| 639 | CONSTRUCTION TRAFFIC SIGN (PANEL A) | EACH | 23 |
| 639 | CONSTRUCTION TRAFFIC SIGN (PANEL B) | EACH | 97 |
| 639 | PORTABLE MESSAGE SIGN PANEL | EACH | 2 |
| 639 | ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL - TYPE C1 | EACH | 2 |
| 639 | CRW/CHANGELIZING DEVICE | EACH | 250 |
| 639 | CONCRETE BARRIER TEMPORARY | LN | 1,000 |
| 639 | TRAFFIC CONE | EACH | 100 |
| 639 | IMPACT ATTENUATOR TEMPORARY | EACH | 2 |

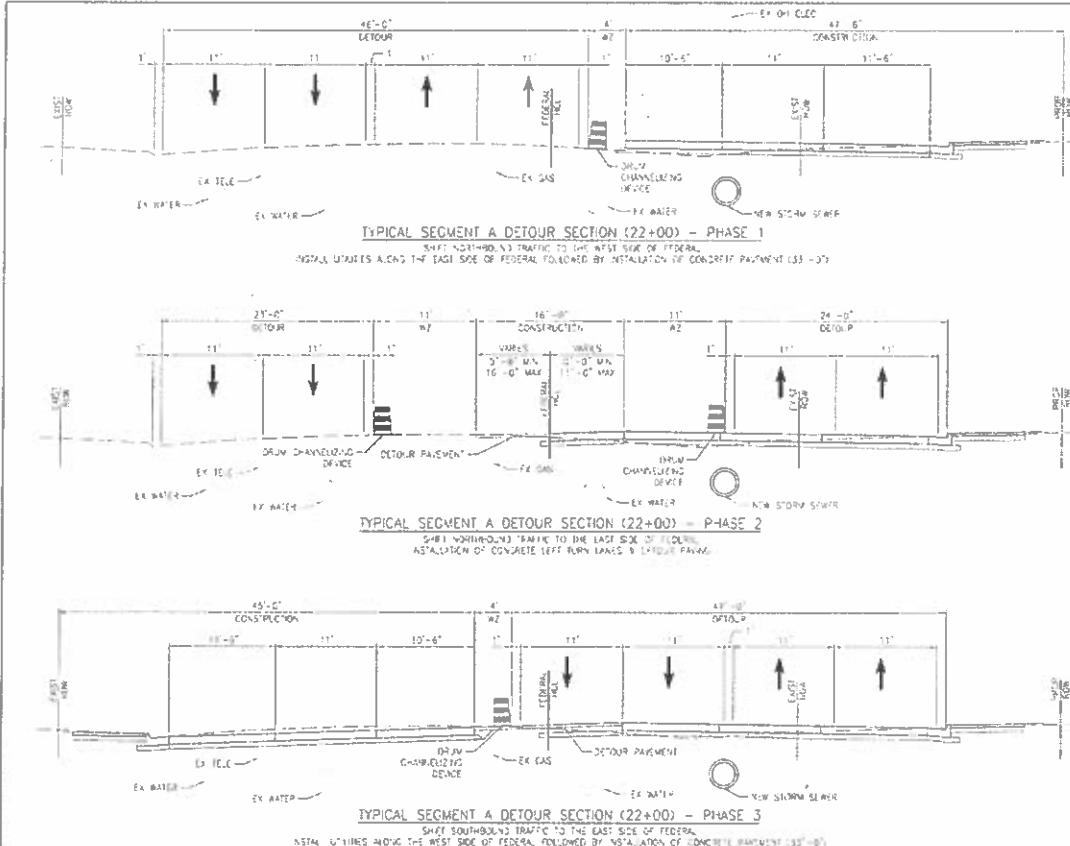
IT IS ESTIMATED THAT THE TEMPORARY PAVING OF THE MEDIAN FOR PHASE 2 OF THE WORK REQUIRES 1,750 SY OF DETOUR PAVEMENT. SEE THE DETOUR TRIPLET SECTION FOR PAVEMENT SECTION.



INDEX OF SHEETS

- 801 INDEX OF SHEETS & TABULATIONS
- 801 - 803 CONSTRUCTION PHASING APPROACH - CROSS SECTIONS - PHASES 1-4
- 804 PHASING GENERAL CONCEPT - PHASE 1
- 805 PHASING GENERAL CONCEPT - PHASE 2
- 806 - 807 PHASING GENERAL CONCEPT - PHASE 3
- 809 PHASING GENERAL CONCEPT - PHASE 4
- 809 PROJECT AREA ALLOWED MAJ. ROADS
- 810 - 811 SEGMENT CONSTRUCTION TRAFFIC CONTROL - PHASE 1A
- 812 - 813 SEGMENT CONSTRUCTION TRAFFIC CONTROL - PHASE 3C

| | | | | |
|--|--|---|--|--|
| Last Modification Date: 01/01/14 Drawing File Name: 2011-PROJ-STR-000384-REV-01.dwg Horizontal Scale: 1" = 40' | Sheet Revisions Date: _____ Comments: _____ R.L. _____ | TSIUVARAS HOLDERSNESS CONSULTING ENGINEERS 2011 W. Canyon Blvd. Suite 100 Denver, CO 80202 | As Constructed As Revised: _____ Revised: _____ VBA: _____ | FEDERAL BY-VD RECON - 5TH AVE TO HOWARD PLACE CONSTRUCTION ZONE TRAFFIC CONTROL INDEX OF SHEETS & TABULATIONS Project No./Code: 2011-PROJ-STR-000384 SA 15957 Sheet Number: 801 |
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NOTES

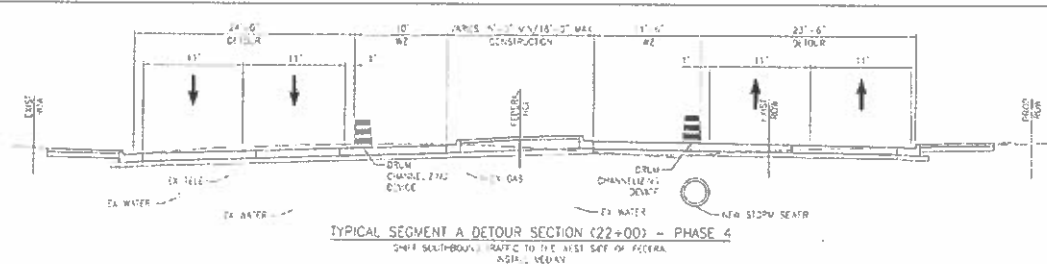
1. SEE PHASING PLANS AND INFORMATION ON CONCURRENT ACTIVITIES FOR LONGITUDINAL LAYOUT AND AERIAL INFORMATION.
2. TYPICAL SECTION SHOWS TRUCKS AT STA 16+00 OF THE FEDERAL ROAD HORIZONTAL CONTROL LINE. INSTALLATION OF UTILITY REPAIRS ALONG SEGMENT LIMITS.
3. SEE UTILITY PLANS FOR ADDITIONAL INFORMATION.
4. MARKING STIPES SHALL BE PROVIDED OVERNIGHT OR WHEN CONSTRUCTION ACTIVITIES ARE NOT TAKING PLACE.
5. TEMPORARY BARRIER SHALL BE INSTALLED TO PROTECT ANY TRENCH LEFT OPEN DURING ALL PERIODS WHILE WORK IS NOT ACTIVELY UNDERWAY INCLUDING OVERNIGHT AND LONGER PERIODS.

LEGEND

- PEB - PEDESTRIAN
- PF - PLASTIC FENCE
- RM - RIGHT OF WAY
- RCF - REINFORCED CONCRETE CURB
- RZ - ADRA ZONE

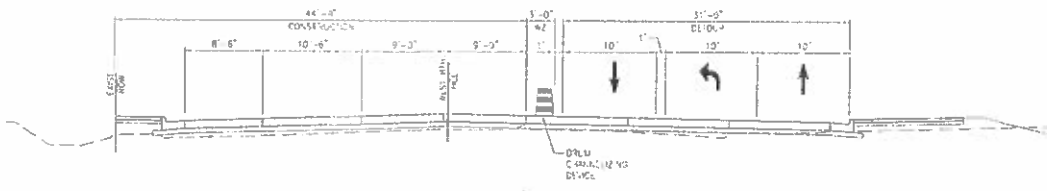
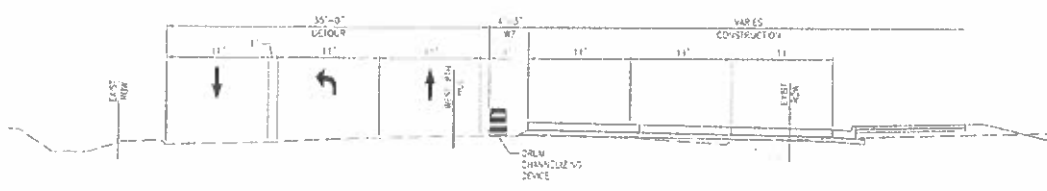


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| Test Information Sheet Drawing File Name: 11216-100-1171-Set.dwg Horizontal Scale: 1"=40' | Sheet Revisions Date: _____ Comments: _____ _____ _____ | City and County of Denver Department of Public Works Engineering Division 220 W. Colfax Ave. 300 Denver, CO 80202 | Colorado Department of Transportation 1500 Lincoln Street Denver, CO 80202 | As Constructed No. 112 No. 1 | FEDERAL BLVD. RECON. - 5TH AVE. TO HOWARD PLACE CONSTRUCTION PHASING APPROACH CROSS SECTIONS - PHASES 1-4 Design: 150 Date: CPA Sheet Label: CTS - Subject Sheets: 2 of 5 | Project No./Code RFD00 2831-172 SA 0925 2011 FBS/MS14-0000164 Sheet Number: 802 |
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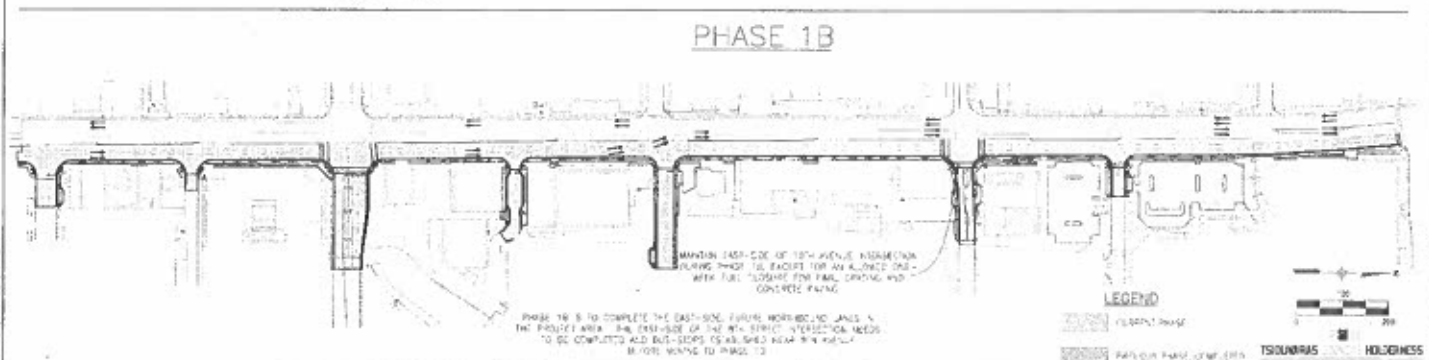
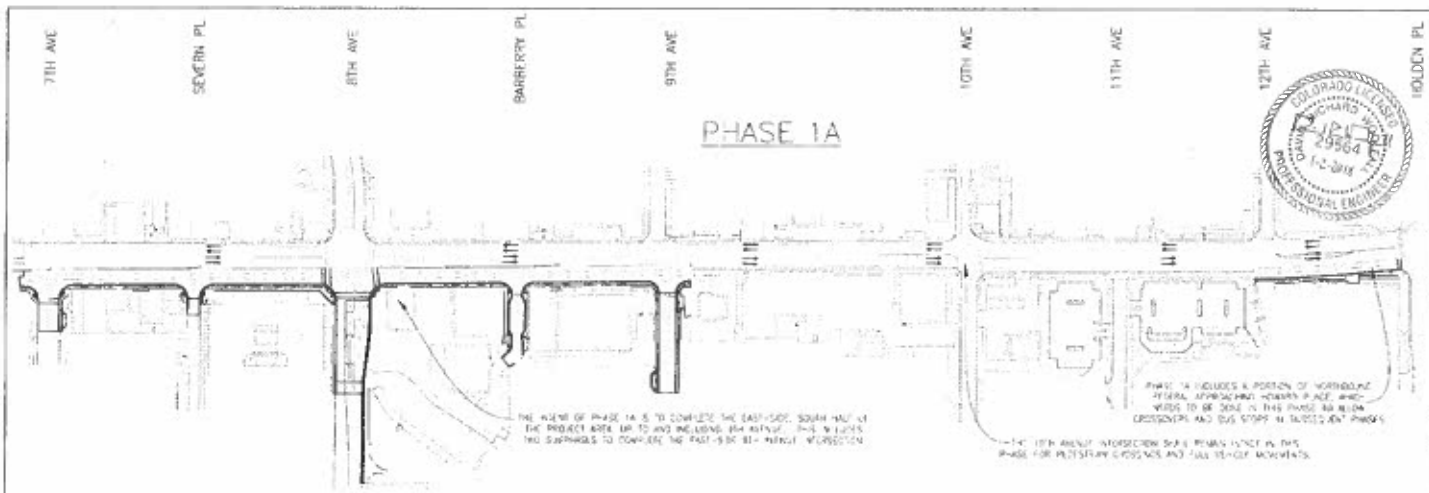
- NOTES**
1. SEE PHASING PLANS AND INFORMATION ON CONCURRENT WORK AREAS FOR ADDITIONAL LPM'S AND ADDITIONAL INFORMATION
 2. TYPICAL SECTION SHOWN TAKEN AT STA 16+40 OF THE FEDERAL BLVD HORIZONTAL CONTROL LINE. INSTALLATION OF UTILITIES WILL HAVE LOGIC SEGMENT LIMITS
 3. SEE UTILITY PLANS FOR ADDITIONAL INFORMATION
 4. MAXIMUM 3:1 SLOPES SHALL BE PROVIDED OVERSIGHT ON WHEN CONSTRUCTION ACTIVITIES ARE NOT TAKING PLACE
 5. TEMPORARY BARRIER SHALL BE UTILIZED TO PROTECT ANY TRENCH LEFT OPEN DURING ALL PERIODS WHERE NO WORK IS ACTIVELY UNDERWAY INCLUDING OVERNIGHT AND LEISURE PERIODS.

- LEGEND**
- PEB - PEDESTRIAN
 - PF - PLASTIC FENCE
 - ROW - RIGHT OF WAY
 - RF - REINFORCED CONCRETE PAVEMENT
 - AZ - WORK ZONE



TSOLUVARAS & HOLDERHESS
 CONSULTING ENGINEERS

| <p>Last Modification Date: _____ Drawing File Name: 1802-15-02-230 Sections Horizontal Scale: 1"=10'</p> | <p>Sheet Revisions</p> <table border="1"> <thead> <tr> <th>Date</th> <th>Comments</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table> | Date | Comments | | | | | | | <p>City of Denver Department of Public Works Engineering Division 220 W. Colfax, Dept. 568 Denver, CO 80202</p> | <p>Colorado Department of Transportation 1115 North Downing Street Denver, CO 80202</p> | <p>As Constructed</p> <table border="1"> <thead> <tr> <th>No. Revisions</th> <th>Revised</th> <th>By</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> | No. Revisions | Revised | By | | | | | | | <p>FEDERAL BLVD. RECON - 5TH AVE. TO HOWARD PLACE CONSTRUCTION PHASING APPROACH CROSS SECTIONS - PHASES 1-4</p> <table border="1"> <thead> <tr> <th>Designer</th> <th>Checker</th> <th>Sheet Number</th> </tr> </thead> <tbody> <tr> <td>NSD</td> <td>DWA</td> <td>3 of 13</td> </tr> </tbody> </table> | Designer | Checker | Sheet Number | NSD | DWA | 3 of 13 | <p>Project No./Code 14-07-2873-172 SA 19937 2011-PROJ-05711-0000164 Sheet Number: 803</p> |
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| Date | Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| No. Revisions | Revised | By | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Designer | Checker | Sheet Number | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NSD | DWA | 3 of 13 | | | | | | | | | | | | | | | | | | | | | | | | | | | |



| <p>Local Worksheet Data Drawing File Name: 101718-04-001 Phasing 1a-concepting Worksheet Size: 1170 Vert. Scale: As Noted</p> | <p>Sheet Revisions</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Rev.</th> <th>Comments</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table> | Rev. | Comments | | | | <p>City and County of Denver Department of Public Works Engineering Division 101 W. Colfax Ave. 3rd Fl. Denver, CO 80202</p> | <p>As Constructed</p> <p>As Proposed: Revised: V-12</p> | <p>FEDERAL BLDG. RECON. - 5TH AVE. 10 HOWARD PLACE PHASING GENERAL CONCEPT PHASE 1</p> <p>Designer: URM Structure Drafter: URM Numbers Scale: 1/8" = 1'-0"</p> | <p>Project No./Code 2017-040-001-000-154 804</p> <p>Sheet Number 804</p> |
|--|---|------|----------|--|--|--|--|--|--|---|
| Rev. | Comments | | | | | | | | | |
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7TH AVE

SEVERN PL

8TH AVE

BARBERRY PL

9TH AVE

10TH AVE

11TH AVE

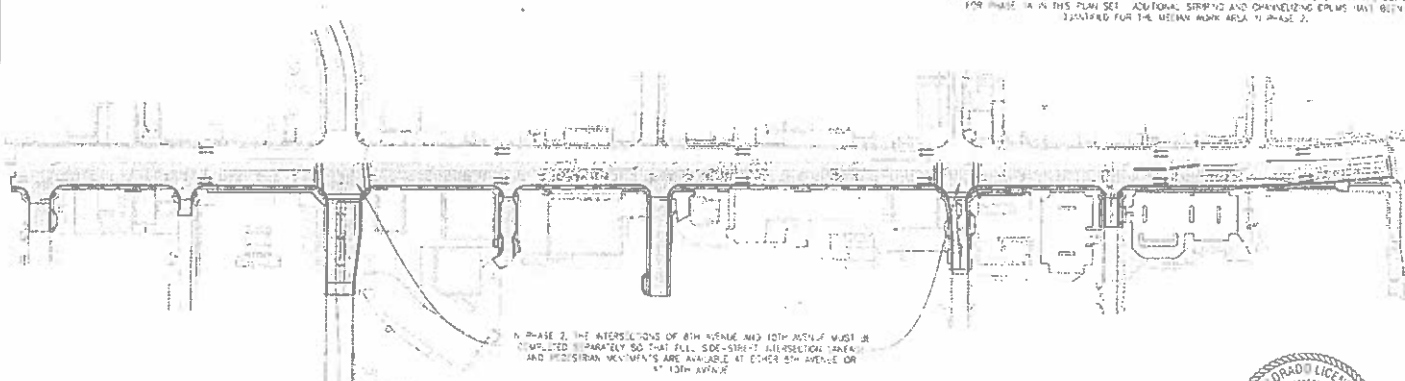
12TH AVE

HOLDEN PL

PHASE 2

IN PHASE 2, TWO LANES OF NORTH-BOUND TRAFFIC ARE USING THE NEW CONCRETE AND TWO LANES OF SOUTH-BOUND TRAFFIC ARE USING THE EXISTING PAVEMENT. PHASE 2 IS TO ADD TEMPORARY PAVING IN THE FUTURE MEDIAN TO ALLOW SOUTH-BOUND LANES TO BE 5-FT WIDE. IN PHASE 3, THE TEMPORARY PAVING IS ALSO TO PROVIDE CROSSOVERS AND LEFT TURN AT INTERSECTIONS.

SOUTH-BOUND PHASE 2 APPROACH SKINING IS NOT DETAILD IN THIS PLAN SET. PHASE 2 APPROACH SKINING AND TRAFFIC CONTROL DEVICES FOR SOUTH-BOUND ARE THE SAME AS SHOWN IN THE DETAILS FOR PHASE 1A IN THIS PLAN SET. ADDITIONAL SKINING AND CHANNELING DEVICES MUST BE QUALIFIED FOR THE MEDIAN WORK AREA IN PHASE 2.



IN PHASE 2, THE INTERSECTIONS OF 8TH AVENUE AND 10TH AVENUE MUST BE COMPLETED SEPARATELY SO THAT FULL SOUTH-SIDE INTERSECTION SIGNALS AND MEDIAN MOVEMENTS ARE AVAILABLE AT EITHER 8TH AVENUE OR AT 10TH AVENUE.

NORTHBOUND PHASE 2 APPROACH SKINING IS NOT DETAILD IN THIS PLAN SET. PHASE 2 APPROACH SKINING AND TRAFFIC CONTROL DEVICES FOR NORTH-BOUND ARE THE SAME AS SHOWN IN THE DETAILS FOR PHASE 1A IN THIS PLAN SET. ADDITIONAL SKINING AND CHANNELING DEVICES MUST BE QUALIFIED FOR THE MEDIAN WORK AREA IN PHASE 2.



LEGEND

CURRENT PHASE

PREVIOUS PHASE, COMPLETED



ISOLANAS HOLDINGS ENGINEERS LLC 00144

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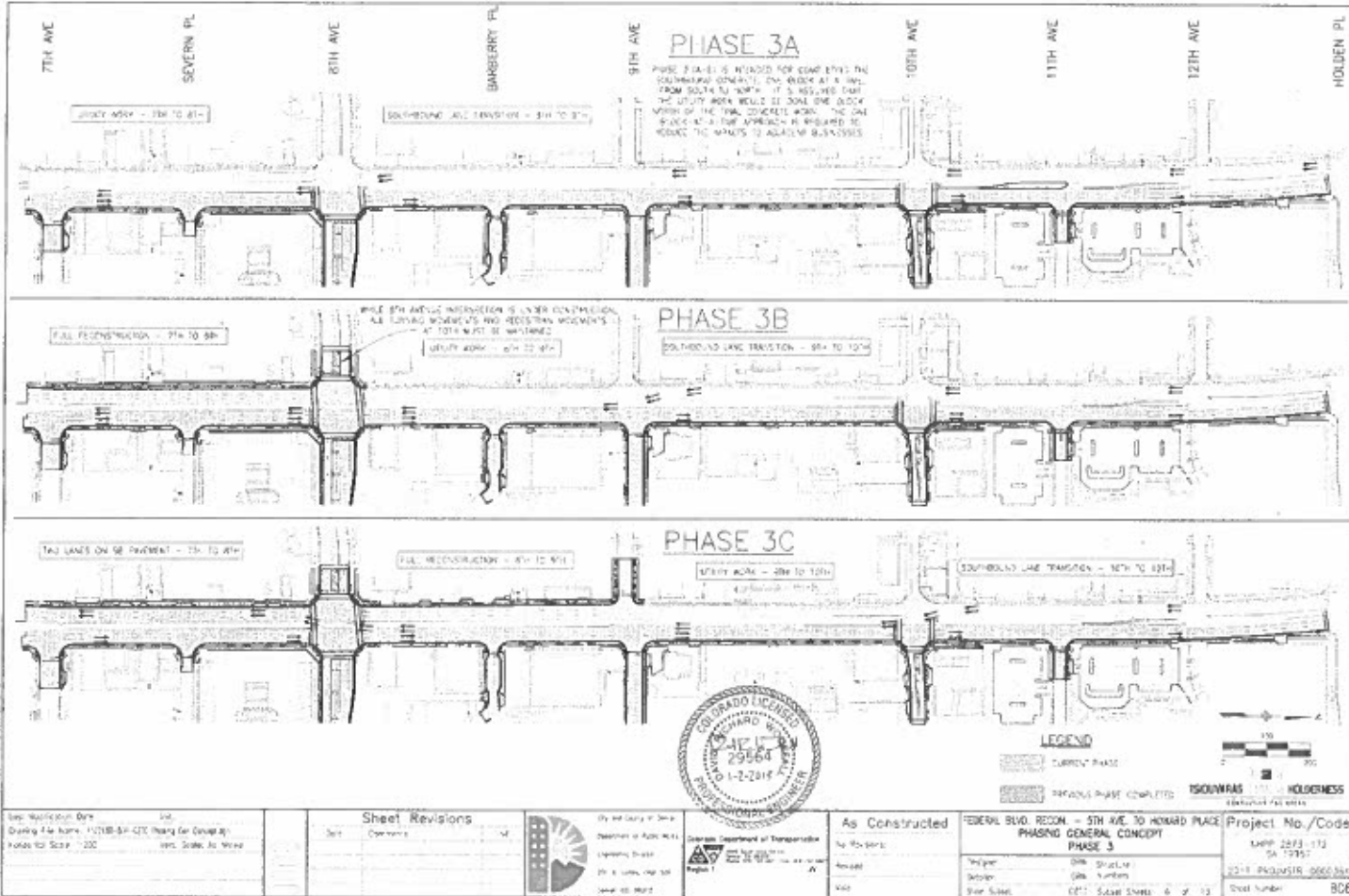
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| No. | Comments |
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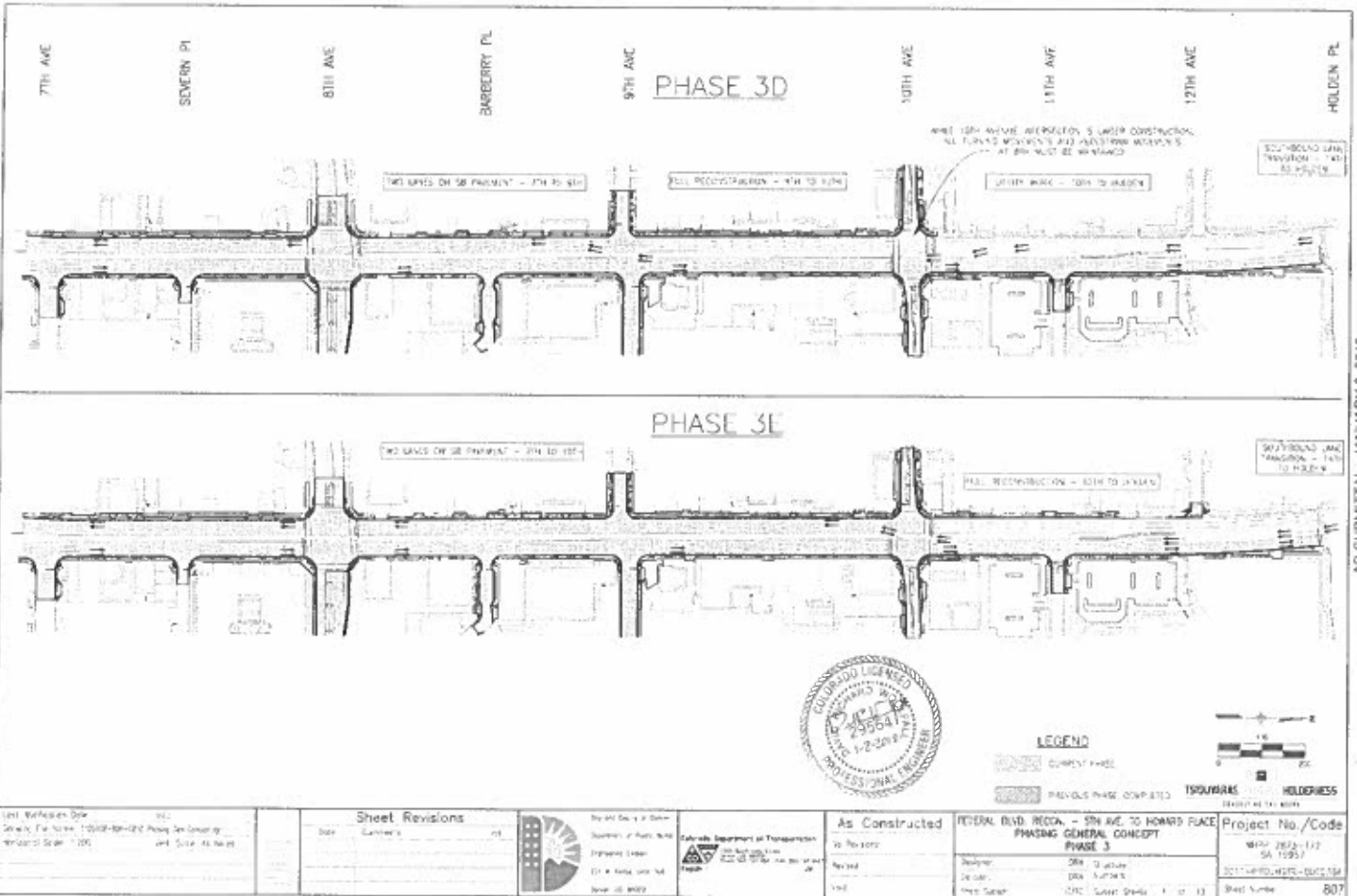
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| FEDERAL BOND RECON. - 5TH AVE. TO HOWARD PLACE PHASING GENERAL CONCEPT PHASE 2 Designer: _____ Date: _____ Sheet Count: _____ of _____ |
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| Project No./Code NHP 1871-12 SA 995 Project No.: 18-0018-000356 Sheet Number: 805 |
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LEGEND
 CURRENT PHASE
 REMAINS PHASE COMPLETE
TSOUVRAS HOLDENESS
 ARCHITECTS P.C.

| <p>Site Modification Date: _____ Drawing File Name: 17018-04-02C (Plan for Concept) Plotter File Name: 17018-04-02C</p> | <p>Sheet Revisions</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">No.</th> <th style="width: 15%;">Description</th> <th style="width: 10%;">Date</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> | No. | Description | Date | | | | <p>City and County of Denver Department of Public Works Engineering Division 200 South Main Street Denver, CO 80202</p> | <p>Division: Department of Transportation Project: _____ Date: _____</p> | <p>As Constructed</p> <p>No. of Sheets: _____ Amount: _____ Date: _____</p> | <p>FEDERAL BLDG. RECON. - 5TH AVE. TO HOWARD PLACE PHASING GENERAL CONCEPT PHASE 3</p> <p>Project: _____ Designer: _____ Date: _____</p> | <p>Project No./Code</p> <p>17018-04-02C 17018-04-02C 17018-04-02C 17018-04-02C</p> |
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| LEGEND | |
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| [Symbol] | CURRENT PHASE |
| [Symbol] | PREVIOUS PHASE COMPLETED |
| [Symbol] | TRUCKWAY |
| [Symbol] | HOLDINGNESS |

| |
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| Unit Worksheet Date: 1/2/18 Scale: 1" = 40' (1" = 200' for Plan, 1" = 40' for Profile) Project Name: FEDERAL BLVD. RECONSTRUCTION - PHASE 3 |
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| Sheet Revisions | |
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| Date | Description |
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| As Constructed | |
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| By | |
| Checked | |
| Date | |

| FEDERAL BLVD. RECONSTRUCTION - PHASE 3 | |
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| Project No./Code | |
| Sheet No. | 807 |

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| Project No./Code | |
| Sheet No. | 807 |

7TH AVE

SEVERN PL

8TH AVE

BARBERRY PL

9TH AVE

10TH AVE

11TH AVE

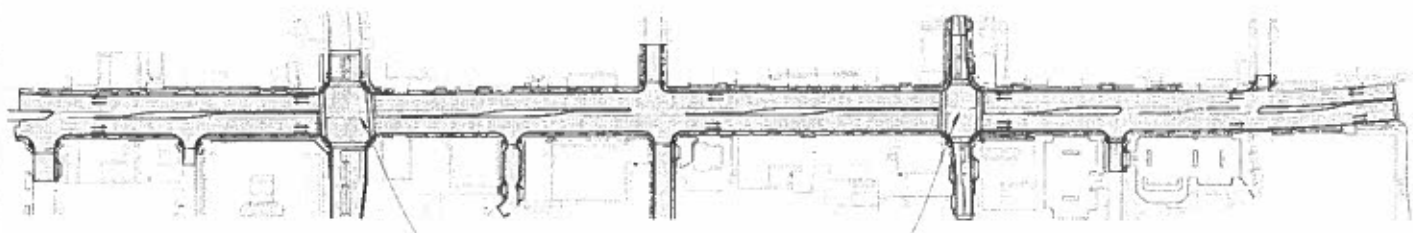
12TH AVE

HOLDEN PL

PHASE 4

IN PHASE 4, BOTH NORTHBOUND AND SOUTHBOUND GENERAL AND TURN LANE SIGNALS, APPROACH SIGNALS AND TRAFFIC CONTROL DEVICES FOR NORTHBOUND ARE THE SAME AS SHOWN IN THE DETAILS FOR PHASE 3C IN THIS PLAN SET. ADDITIONAL SIGNALS AND CHANGING SIGNALS HAVE BEEN SUBMITTED FOR THE WESTERN WORK AREA IN PHASE 4.

BECAUSE NO PHASE 4 APPROACH SIGNALS IS NOT DETAIL IN THIS PLAN SET, PHASE 4 APPROACH SIGNALS AND TRAFFIC CONTROL DEVICES FOR SOUTHBOUND ARE THE SAME AS SHOWN IN THE DETAILS FOR PHASE 3C IN THIS PLAN SET. ADDITIONAL SIGNALS AND CHANGING SIGNALS HAVE BEEN SUBMITTED FOR THE WESTERN WORK AREA IN PHASE 4.



IN PHASE 4, THE INTERSECTIONS OF 8TH AVENUE AND 10TH AVENUE MUST BE COMPLETED SEPARATELY TO THAT THIS SIDE STREET INTERSECTION (ADJACENT AND PROXIMATE WORKMENTS ARE AVAILABLE AT EITHER 8TH WITH I-24 OR 10TH WITH I-24).

NORTHBOUND PHASE 4 APPROACH SIGNALS IS NOT DETAIL IN THIS PLAN SET. PHASE 4 APPROACH SIGNALS AND TRAFFIC CONTROL DEVICES FOR NORTHBOUND ARE THE SAME AS SHOWN IN THE DETAILS FOR PHASE 3C IN THIS PLAN SET. ADDITIONAL SIGNALS AND CHANGING SIGNALS HAVE BEEN SUBMITTED FOR THE WESTERN WORK AREA IN PHASE 4.



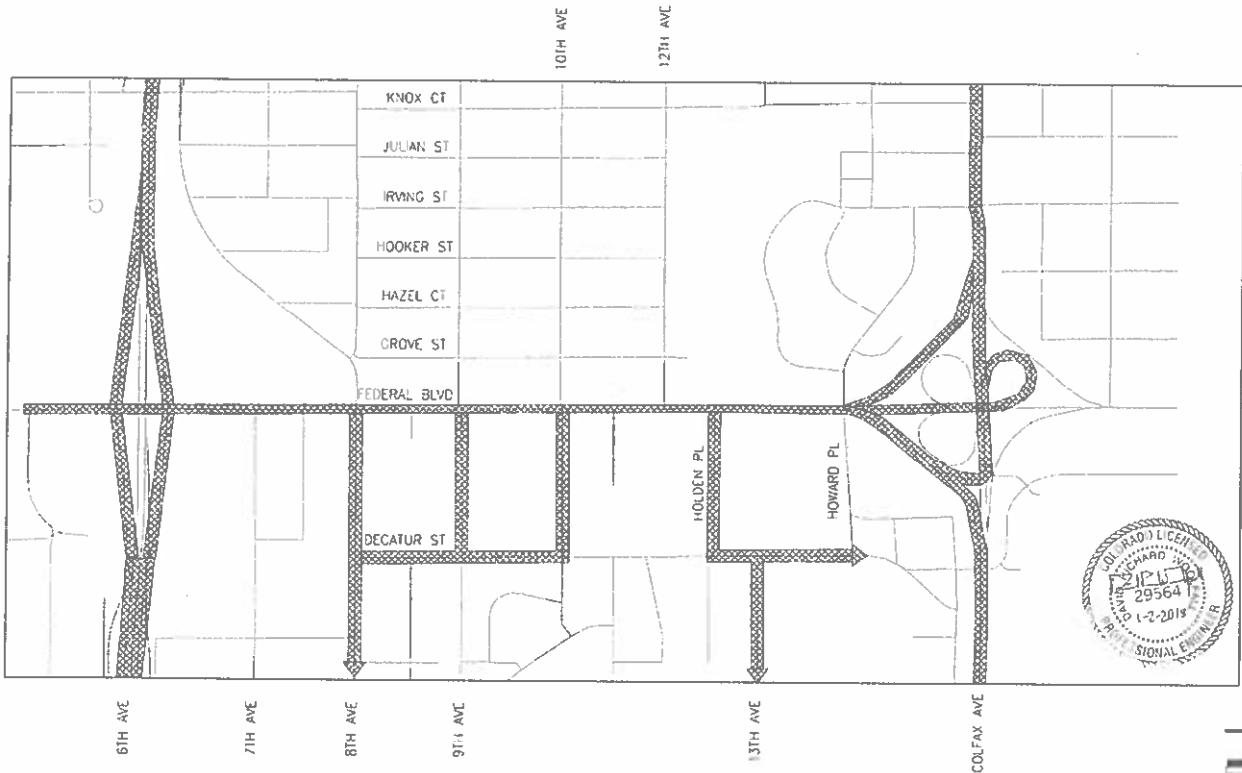
LEGEND

- CURRENT PHASE
- PROPOSED PHASE



| Date: 1/2/2018 Drawing File Name: TSOULIMAS-2018-001-200-Phase 04 Concept.dwg Horizontal Scale: 1:200 Vertical Scale: As Noted | Sheet Revisions <table border="1"> <thead> <tr> <th>Date</th> <th>Comments</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table> | Date | Comments | | | City of St. Louis Department of Public Works Engineering Section 211 North 4th Street St. Louis, MO 63102 | Missouri Department of Transportation Missouri Department of Transportation 201 North 4th Street St. Louis, MO 63102 | As Constructed No Revisions Revisions: None | FEDERAL BLDG. RECON - 5TH AVE TO HOWARD PLACE PHASING GENERAL CONCEPT PHASE 4 Designer: (30) Structure Checker: (30) Number 1 Sheet Set: (21) Sheet Number 8 of 13 | TSOULIMAS PROFESSIONAL ENGINEERS Project No./Code 2018-001-200-112 SA 1221 2018-PROJ-112-001-004 Sheet Number: 808 |
|---|---|------|----------|--|--|---|---|---|---|--|
| Date | Comments | | | | | | | | | |
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AD SUBMITTAL - JANUARY 2, 2018



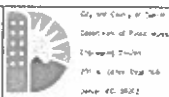
LEGEND

- ALLIANCE HALL ROADS
- TSCUVARAS HOLDERSNESS



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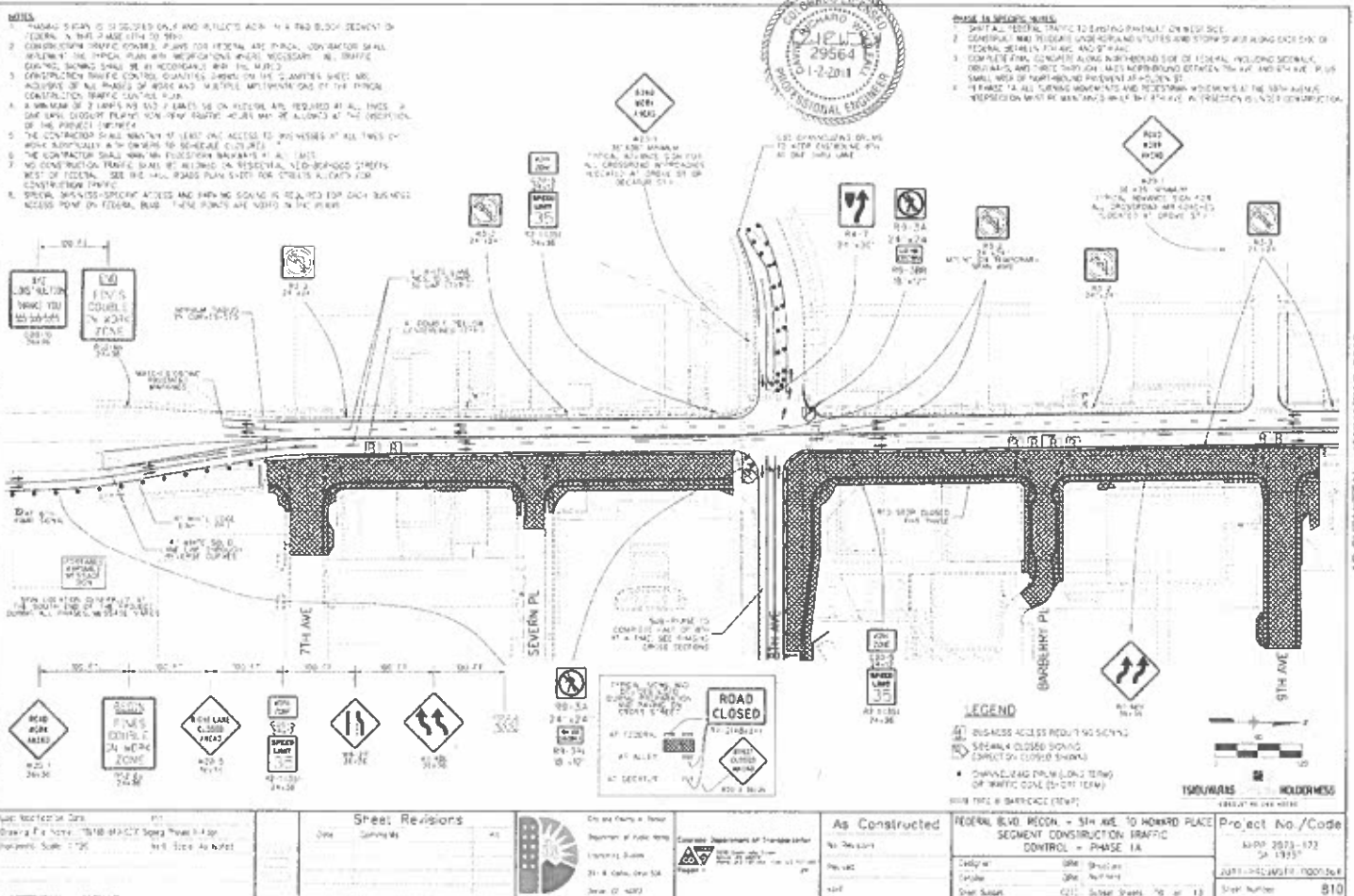
| Sheet Revisions | |
|-----------------|----------|
| Date | Comments |
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City and County of Denver
 Colorado Department of Transportation
 Project: 2017-2018
 Date: 1/2/18

As Constructed
 FEDERAL BLVD RECON. - 5TH AVE. TO HOWARD PLACE
 PROJECT AREA ALLOWED HAUL ROADS

Project No./Code
 N-PP 2673-7
 SA 13957
 2017-2018-0003504
 Sheet Number: 809



- NOTES**
1. TRAFFIC SIGNS TO BE DISPLAYED ONLY AND REFLECTS ACH. IN A TWO BLOCK SEGMENT OF FEDERAL. A THIS PHASE (174 TO 180).
 2. CONSTRUCTION TRAFFIC CONTROL PLANS FOR FEDERAL ARE PRELIM. CONTRACTOR SHALL REVISIONS TO THE TRAFFIC PLAN WITH NECESSARY AND NECESSARY. ALL TRAFFIC CONTROL SIGNS SHALL BE IN ACCORDANCE WITH THE PLAN.
 3. CONSTRUCTION TRAFFIC CONTROL QUANTITIES SHOWN ON THE DRAWINGS SHALL BE INDICATIVE OF ONE PHASE OF WORK AND MULTIPLE IMPLEMENTATIONS OF THE TRAFFIC CONTROL TRAFFIC CONTROL PLAN.
 4. A MINIMUM OF 2 BARRIERS OR 2 LINES OF CONSTRUCTION ARE REQUIRED AT ALL TIMES. A ONE WAY CLOSURE PLAN FOR FEDERAL. ACCESS MAY BE ALLOWED AT THE DISCRETION OF THE PROJECT ENGINEER.
 5. THE CONTRACTOR SHALL MAINTAIN AT LEAST ONE ACCESS TO PROPERTIES AT ALL TIMES OF WORK. SUFFICIENTLY WITH SIGNAGE TO MAINTAIN CLOSURES.
 6. THE CONTRACTOR SHALL MAINTAIN PROVISIONS FOR ALL LANE.
 7. NO CONSTRUCTION TRAFFIC SHALL BE ALLOWED ON RESIDENTIAL SIDE-DRIVE STREETS WEST OF FEDERAL. SEE THE ROAD PLAN SHEET FOR DETAILS AND FOR CONSTRUCTION TRAFFIC.
 8. SPECIAL SIGNAGE-SPECIAL ACCESS AND PARKING SIGNS ARE REQUIRED FOR EACH BUSINESS ACCESS POINT ON FEDERAL. THESE SIGNS ARE SHOWN IN THE PLAN.



- PHASE 1A SIGNAGE NOTES**
1. DISPLAY ALL FEDERAL TRAFFIC TO FEDERAL TRAFFIC ON WEST SIDE.
 2. FEDERAL TRAFFIC SHALL BE ALLOWED TO ENTER AND STOP ON WEST SIDE OF FEDERAL BETWEEN 174 AND 180.
 3. COMPLETE TRAFFIC CONTROL ALONG NORTHBOUND SIDE OF FEDERAL INCLUDING SIDEWALK, DRIVEWAYS AND TRUCK DRIVEWAY. ALSO INTER-BOUND BETWEEN THE AVE. AND FEDERAL. IN ONE SMALL AREA OF NORTHBOUND PRESENT AT 174-175.
 4. TRAFFIC IS ALL TURNING NORTHWARD AND TRAFFIC WESTWARD OF THE 5TH AVE. INTERSECTION MUST BE MAINTAINED WHILE THE TRAFFIC INTERSECTION IS UNDER CONSTRUCTION.

| <p>Let. Location of Draw: 171</p> <p>Drawn By: J. L. W. (JLW) Scale: 1/2" = 1'-0"</p> | <p>Sheet Revisions</p> <table border="1"> <tr> <th>Date</th> <th>Description</th> </tr> <tr> <td> </td> <td> </td> </tr> </table> | Date | Description | | | <p>City and County: Annapolis</p> <p>Department of Public Works</p> <p>Project Name: 21 - 8 - 000 - 000 - 000</p> <p>Date of Issue: 1/2/2018</p> | <p>As Constructed</p> <p>No. of Sheets: 1</p> <p>This Sheet: 1</p> | <p>FEDERAL BLVD RECON - 5TH AVE TO HOWARD PLACE</p> <p>SEGMENT CONSTRUCTION TRAFFIC CONTROL - PHASE 1A</p> <p>Scale: 1/2" = 1'-0"</p> <p>Sheet Number: 810</p> | <p>Project No./Code: ADP 2573-172 SA 1935</p> <p>Drawn By: J. L. W. (JLW)</p> <p>Scale: 1/2" = 1'-0"</p> <p>Sheet Number: 810</p> |
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| Date | Description | | | | | | | | |
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NOTE TO SPECIFIC SITES

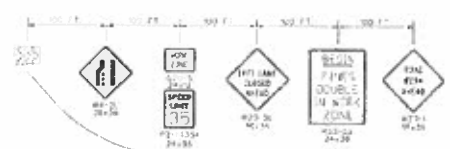
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2. CONTRACTOR SHALL MAINTAIN SERVICE SIGNAGE TO BE MAINTAINED AS SHOWN IN THESE PLANS UNLESS OTHERWISE NOTED.
3. CONTRACTOR SHALL MAINTAIN SERVICE SIGNAGE TO BE MAINTAINED AS SHOWN IN THESE PLANS UNLESS OTHERWISE NOTED.
4. CONTRACTOR SHALL MAINTAIN SERVICE SIGNAGE TO BE MAINTAINED AS SHOWN IN THESE PLANS UNLESS OTHERWISE NOTED.
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7. CONTRACTOR SHALL MAINTAIN SERVICE SIGNAGE TO BE MAINTAINED AS SHOWN IN THESE PLANS UNLESS OTHERWISE NOTED.



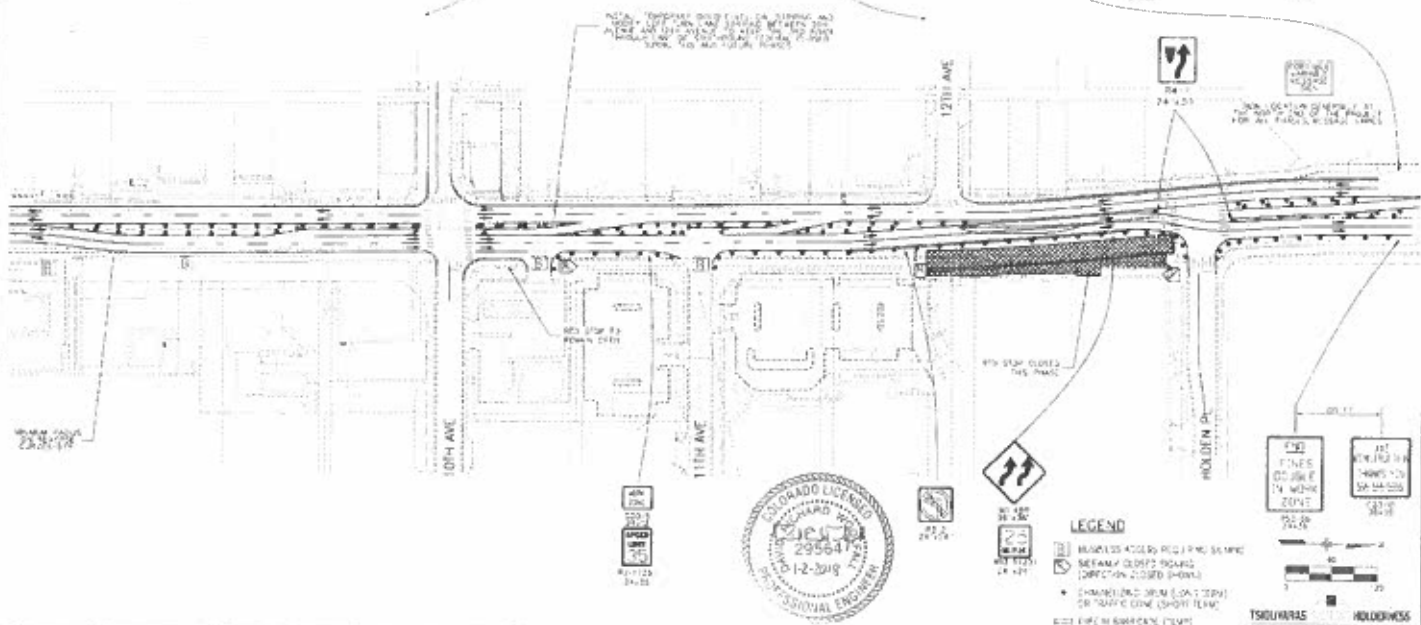
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AHEAD



W11-2
AHEAD



W11-1
AHEAD

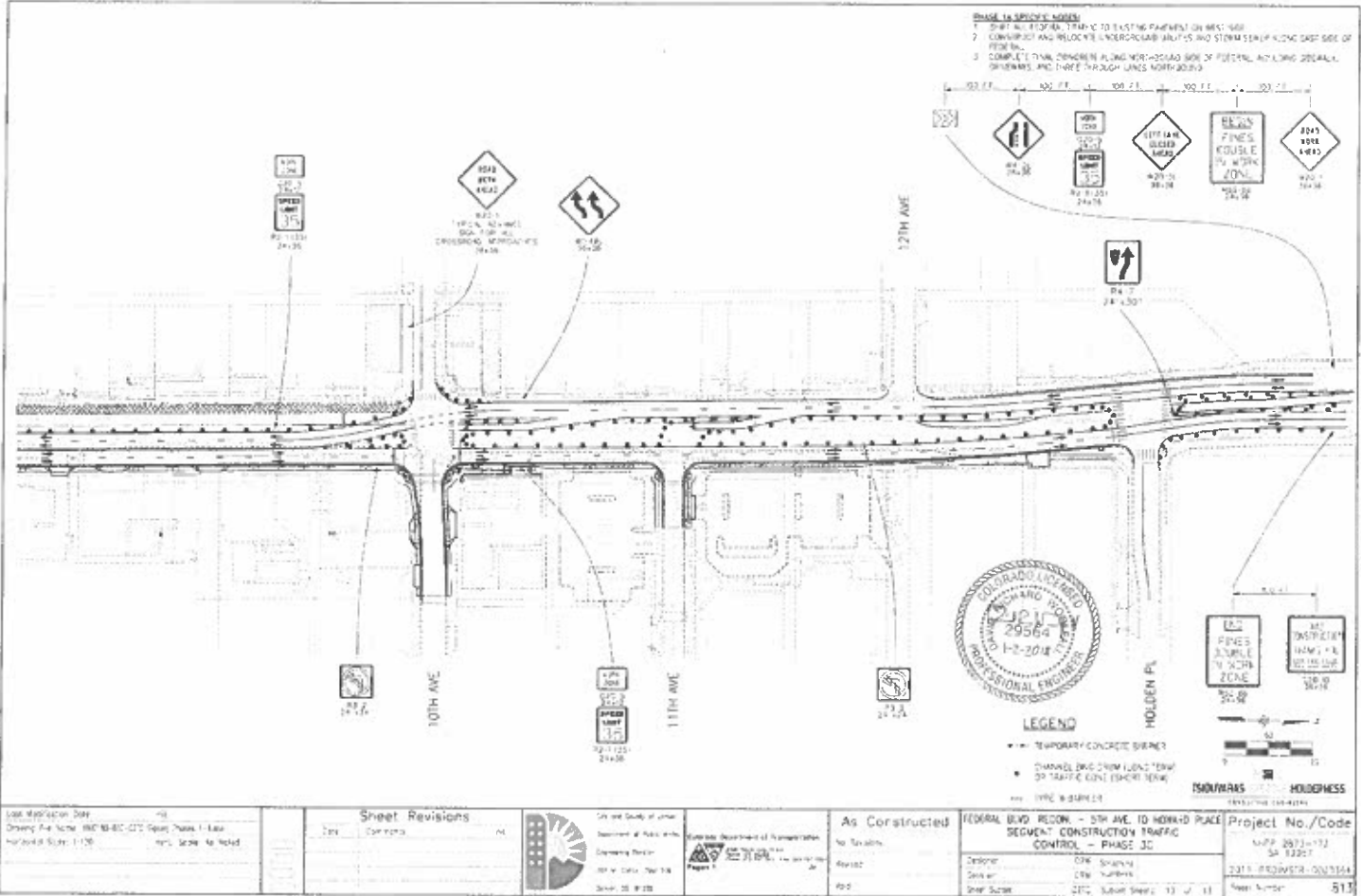


LEGEND

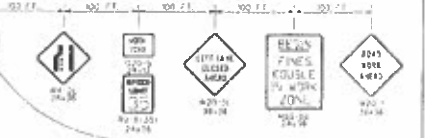
- Symbol: BUS/ISS ACCESS (RED) PRO SIGNAGE
- Symbol: SEPARATE CLOSED SIGNAL (DIRECTION CLOSED SIGNAGE)
- Symbol: CHANGED SIGNAL (ON 1 TOP) OR TRAFFIC CONE (SHORT TERM)
- Symbol: CONE (LONG TERM)
- Symbol: CONE (SHORT TERM)

TSUBURARA HOLDINGS

| | | | | | | |
|--|--|--|---|---|--|---|
| 100% Submittal Date: 01/02/18 Drawing Title: FEDERAL BND RECAL - 5th Ave. To Howard Place Segment Construction Traffic Control - Phase 1A Project No.: 17000 Scale: 1/100 Date: 01/02/18 | Sheet Revisions No. Remarks % 1 0% | State of Colorado Department of Transportation Engineering & Construction 200 N. Lincoln Ave., Suite 1000 Denver, CO 80202 | License No.: 29564 David J. Smith Professional Engineer | As Constructed No. Remarks % 1 0% | FEDERAL BND RECAL - 5th Ave. To Howard Place Segment Construction Traffic Control - Phase 1A Date: 01/02/18 Sheet: 81 of 113 | Project No./Code 17000-1700000-00000000 17000-1700000-00000000 Sheet Number: 81 of 113 |
| | 100% Submittal Date: 01/02/18 Drawing Title: FEDERAL BND RECAL - 5th Ave. To Howard Place Segment Construction Traffic Control - Phase 1A Project No.: 17000 Scale: 1/100 Date: 01/02/18 | | License No.: 29564 David J. Smith Professional Engineer | | FEDERAL BND RECAL - 5th Ave. To Howard Place Segment Construction Traffic Control - Phase 1A Date: 01/02/18 Sheet: 81 of 113 | |



- PHASE 1A SIGNAGE NOTES:**
1. SHIFTS TO EXISTING TRAFFIC TO EXISTING PAVEMENT ON WEST SIDE
 2. CONSTRUCT AND INSTALL UNDERPASS BRIDGE AND STORM SEWER ALONG EAST SIDE OF 10TH AVE
 3. COMPLETE TRAIL CONSTRUCTION ALONG NORTH-SOUTH SIDE OF FEDERAL AND LONG STREETS, SIDEWAYS, AND THREE THROUGH LINES NORTH BOUND



LEGEND

- TEMPORARY CONCRETE BARRIER
- CHANNEL DRAIN WITH LEGAL TRAFFIC CONTROL SIGNAGE
- TYPE B SIGNAGE

ISOWARRS HOLDENPSS

Last Modification Date: 01/02/18
 Drawing File Name: 180118-01-012 Signage Phase 1A.dwg
 Horizontal Scale: 1"=50'

| Sheet Revisions | |
|-----------------|----------|
| Date | Comments |
| | |



Colorado Department of Transportation
 Project No. 18-01-012
 Page 1

As Constructed
 No Taxation
 Revised
 01/02/18

FEDERAL ROAD - 5TH AVE. TO DENVER PLACE
 SEGMENT CONSTRUCTION TRAFFIC CONTROL - PHASE 3C

Designer: CDE
 Drafter: CDE
 Checker: CDE
 Date: 01/02/18

Project No./Code
 18-01-012
 18-01-012-012
 18-01-012-012-012
 Sheet Number: 513