SITE DEVELOPMENT PLANS FOR
MURPHY USA (NTI)
LONE TREE, COLORADO
9091 WESTVIEW RD (MURPHY #25181)

ENGINEERING CERTIFICATION NOTE

THESE CONSTRUCTION PLANS FOR MURPHY OIL USA WERE PREPARED BY ME (OR UNDER MY DIRECT SUPERVISION I) IN ACCORDANCE WITH THE REQUIREMENTS OF DOUGLAS COUNTY'S ROADWAY DESIGN AND CONSTRUCTION STANDARDS, STORM DRAINAGE AND TECHNICAL CRITERIA, AND THE GRADING, EROSION AND SEDIMENT CONTROL MANAGER.

JOSEPH D. PARK, P.E.
GALLOWAY & COMPANY, LLC.

GENERAL NOTES

A. CONTRACTOR SHALL BE RESPONSIBLE FOR RAZING AND REMOVAL OF THE EXISTING STRUCTURES, RELATED UTILITIES, PAVING, UNDERGROUND STORAGE TANKS AND ANY OTHER EXISTING IMPROVEMENTS AS NOTED.

B. CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM PREVIOUS AND CURRENT DEMOLITION OPERATIONS. DISPOSAL WILL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND/OR FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.

C. THE GENERAL CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR AND SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT.

D. SAFETY NOTICE TO CONTRACTOR: IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY AND SECURITY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. ANY CONSTRUCTION OBSERVATION BY THE ENGINEER OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES, IN, ON OR NEAR THE CONSTRUCTION SITE.

E. ALL CONSTRUCTION WITHIN STATE HIGHWAY DEPARTMENT RIGHT-OF-WAY SHALL BE COORDINATED WITH THE HIGHWAY DEPARTMENT RESIDENT MAINTENANCE ENGINEER.

F. ALL SITE WORK FOR THIS PROJECT SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE RELEVANT UTILITY COMPANY OR REGULATORY AUTHORITY, AND THE SPECIFICATIONS FOR THE CONSTRUCTION OF THE EXISTING IMPROVEMENTS WHICH ARE BEING ALTERED OR REPLACED. CONTRACTOR SHALL CONTACT THE ENGINEER FOR SPECIFICATION SECTIONS FOR ITEMS SUCH AS LANDSCAPING AND IRRIGATION THAT ARE AFFECTED BY THE WORK BUT NOT COMPLETELY DETAILED OR SPECIFIED ON THESE PLANS.

G. CONSTRUCTION AND INSTALLATION OF 2,824 SF BUILDING, ALL UTILITY ENTRANCES AND (1) 25,000 GALLON & (1) 26,000 GALLON UNDERGROUND TANKS SHALL BE IN ACCORDANCE WITH ASSOCIATED PLANS.

H. THE GENERAL CONTRACTOR TO COORDINATE THE CANOPY SIGN LOCATIONS AND FREE-STANDING SIGNAGE WITH MURPHY'S DEVELOPMENT PROJECT MANAGER AND SIGN COMPANY.

NOTES TO CONTRACTOR

A. THE CONTRACTOR SHALL PROVIDE THE ENGINEER OF RECORD WITH THE DATE WHEN CONSTRUCTION IS TO BEGIN.

B. THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION STAKING AND LAYOUT.

C. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING THE ENGINEER OF RECORD OF ANY DEVIATIONS DURING CONSTRUCTION AND SHALL REPORT THEM IMMEDIATELY.

D. CONTRACTOR IS REQUIRED TO KEEP REDLINE AS-BUILTS AND TO PROVIDE THOSE TO MURPHY UPON COMPLETION.

E. CONTRACTOR IS RESPONSIBLE FOR UNDERSTANDING THE AS-BUILT AND CERTIFICATE OF OCCUPANCY (C.O.) REQUIREMENTS FOR THE ISSUING AUTHORITY.

F. IF AN ELEVATION CERTIFICATE OR AS-BUILT SURVEY IS REQUIRED BY THE ISSUING AUTHORITY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE SCHEDULING OF THE SURVEY WITH THE CIVIL CONSULTANT PRIOR TO DEADLINE FOR OBTAINING THE C.O. AND AFTER NECESSARY COMPLETED WORK TO BE SHOWN ON SURVEY.

PROPERTY DESCRIPTION

LOT 3, PARK MEADOWS TOWN CENTER FILING NO. 1-A, 3RD AMENDMENT, ACCORDING TO THE PLAT THEREOF RECORDED MAY 14, 1996 AT RECEPTION NO. 9625832.
COUNTY OF DOUGLAS,
STATE OF COLORADO.

THE ABOVE DESCRIPTION CONTAINS 42,332 SQUARE FEET OR 0.97 ACRES, MORE OR LESS

BENCHMARK (VERTICAL) INFORMATION

DOUGLAS COUNTY, COLORADO, SURVEY CONTROL MONUMENT AND NATIONAL GEODETIC SURVEY (NGS) BENCHMARK, DESIGNATION "JOG".
DESCRIPTION: 3.25" BRASS CAP STAMPED, "HORIZONTAL CONTROL MARK THE DIRECTOR NATION GEODETIC SURVEY, JOG, 1977" IN A CONCRETE COLUMN.
NGS DATASHEET STATION RECOVER DESCRIPTION: "RECOVERY NOTE BY WOOLPERT CONSULTANTS 2010 (DJK). STATION IS FLUSH RIGHT-OF-WAY FENCE IS NOT IN PLACE. MARK IS ABOUT 35 FT (10.7M) WEST SOUTHWEST OF THE WESTERLY EDGE OF A PAVED PARKING LOT, ABOUT 30 FT (9.1M) NORTH OF AN ELECTRICAL CONTROL BOX, ABOUT 5 FT (1.5M) WEST OF A CARSONITE WITNESS POST AND ABOUT 3 FT (.09M) EAST OF A STEEL FENCE POST."
ELEVATION = 5893.36' (NAVD88)

ON-SITE BENCHMARK #1
NO. 5 REBAR W/ GREEN PLASTIC CAP STAMPED, "GALLOWAY CONTROL", LOCATED AT THE NORTHEAST CORNER OF THE INTERSECTION OF PARKLAND ROAD AND WESTVIEW ROAD, APPROXIMATELY 27.0' EAST OF THE POINT OF TANGENT OF THE BACK OF A CONCRETE CURN AND APPROXIMATELY 68.0' NORTHEAST OF A SANITARY SEWER MANHOLE LOCATED IN THE INTERSECTION OF SAID ROADS.
ELEVATION = 5793.64'

ON-SITE BENCHMARK #2
CHISELED "X" ON THE NORTHEAST END OF A CONCRETE CURB AT THE BACK OF A HANDICAP RAMP, LOCATED AT THE NORTHWEST CORNER OF THE INTERSECTION OF PARKLAND ROAD AND WESTVIEW ROAD, APPROXIMATELY 6.0' NORTHEAST OF A LIGHT POLE AND APPROXIMATELY 137.' SOUTHWEST OF A STOP SIGN.
ELEVATION = 5793.17

BASIS OF BEARINGS

ALL BEARINGS ARE GRID BEARINGS OF THE COLORADO STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, NORTH AMERICAN DATUM 1983. THIS BEARING IS BASED ON THE NORTH RIGHT-OF-WAY LINE OF WESTVIEW ROAD AND IS CONSIDERED TO BEAR N84°09'52"W, MONUMENTED ON THE EAST END OF THE LINE BY A FOUND NO. 5 REBAR WITH NO CAP, AND ON THE WEST END OF THE LINE BY A FOUND NO. 5 REBAR WITH A 1.25" YELLOW PLASTIC CAP STAMPED, "BENCHMARK LS 16401."

WETLANDS NOTE

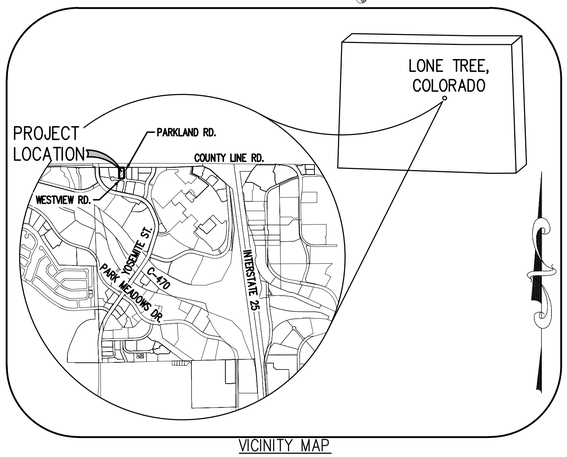
ANY DEVELOPMENT, EXCAVATION, CONSTRUCTION, OR FILLING IN A U.S. ARMY CORPS OF ENGINEERS DESIGNATED WETLAND IS SUBJECT TO LOCAL, STATE AND FEDERAL APPROVALS. THE CONTRACTOR SHALL COMPLY WITH ALL PERMIT REQUIREMENTS AND/OR RESTRICTIONS AND ANY VIOLATION WILL BE SUBJECT TO FEDERAL PENALTY. THE CONTRACTOR SHALL HOLD THE OWNER/DEVELOPER, THE ENGINEER AND THE LOCAL GOVERNING AGENCIES HARMLESS AGAINST SUCH VIOLATION.

FLOOD CERTIFICATION

THIS PROPERTY IS NOT LOCATED WITHIN ANY PRESENTLY ESTABLISHED 100-YEAR FLOOD PLAIN, AS SHOWN BY THE FEDERAL MANAGEMENT AGENCY, FLOOD INSURANCE RATE MAP FOR THE CITY OF LONE TREE, COMMUNITY PANEL NUMBER 0034G, DATED 3/16/2016.

NOTICE TO BIDDERS

ALL QUESTIONS REGARDING THE PREPARATION OF THE GENERAL CONTRACTOR'S BID SHALL BE DIRECTED THROUGH MURPHY'S CONSTRUCTION WEBSITE (HTTPS://MURPHYUSA.PROJECTMATES.COM/) INCLUDING Q&A, RFI'S, BID SUBMISSION, CHANGE ORDER REQUESTS, ETC. ONCE AWARDED THE CONTRACTOR SHALL COORDINATE WITH THE OWNER'S PROJECT MANAGER. SUBCONTRACTORS MUST DIRECT THEIR QUESTIONS THROUGH THE GENERAL CONTRACTOR. THE CONSULTING ARCHITECT AND/OR THE CONSULTING ENGINEER SHALL NOT BE CONTACTED DIRECTLY WITHOUT PRIOR AUTHORIZATION FROM THE OWNER/DEVELOPER.



VICINITY MAP
1"=2000'

PLAN INDEX

SHEET NUMBER	SHEET DESCRIPTION	SHEET ID
1	COVER SHEET	C-0.0
2	PROJECT NOTES	C-1.0
3	DEMOLITION PLAN	C-2.0
4	SITE SIGNANGE & STRIPING PLAN	C-3.0
5	GRADING PLAN	C-4.0
6	ENLARGED GRADING PLAN	C-4.1
7	OVERALL DRAINAGE PLAN	C-4.2
8	BUILDING & CANOPY DRAINAGE PLAN	C-4.3
9	STORM DETAILS	C-4.4
10	MANHOLE DETAILS	C-4.5
11	UTILITY PLAN	C-6.0
12	SANITARY PLAN	C-6.1
13	PAVEMENT & JOINTING PLAN	C-7.0
14	JOINT DETAILS	C-7.1
15	SITE CIRCULATION PLAN	C-8.0
16	SITE DETAILS	C-9.0
17	SITE DETAILS	C-10.0
18	SITE DETAILS	C-12.0
19	CONCRETE SPECIFICATIONS	C-13.0
20	EARTHWORK SPECIFICATIONS	C-13.1
21	TRASH ENCLOSURE DETAILS	C-14.0
22	LANDSCAPE PLAN	LP-1
23	TREE PRESERVATION PLAN	LP-2
24	LANDSCAPE NOTES & DETAILS	LP-3
25	IRRIGATION PLAN	IR-1
26	IRRIGATION NOTES & DETAILS	IR-2
27	IRRIGATION NOTES & DETAILS	IR-3
28	PHOTOMETRIC SITE PLAN	L1.0
29	PHOTOMETRIC DETAILS	L1.1

GALLOWAY & COMPANY, INC.
5500 GREENWOOD VILLAGE BLVD., SUITE 200
GREENWOOD VILLAGE, CO 80111
(303) 770-8884
CONTACT: JOE PARK

RESOURCE LIST

PLANNING & ZONING
CITY PLANNING
9220 KIMMER DR., SUITE 100
LONE TREE, CO 80124
CONTACT: ROSHANA FLOYD
(303) 708-1818

STORMWATER
STORMWATER MANAGEMENT
9220 KIMMER DR., SUITE 100
LONE TREE, CO 80124
(303) 708-1818

ELECTRIC
XCEL ENERGY
2070 S VALENTIA ST
DENVER, CO, 80231
(303) 671-3830

SEWER & WATER
SOUTHGATE WATER & SANITATION DISTRICT
3722 E ORCHARD ROAD
CENTENNIAL, CO 80121
(303) 779-0261

TANK AND PRODUCT PIPING
GALLOWAY & COMPANY, LLC
5500 GREENWOOD PLAZA BLVD SUITE 200
GREENWOOD VILLAGE, 80111
CONTACT: DAVE JONES
(303) 962-8506

HEALTH DEPARTMENT
DOUGLAS COUNTY HEALTH DEPARTMENT
11045 E LANSING CIRCLE, 3RD FLOOR
ENGLEWOOD, CO 80112
(720) 643-2400

GEOTECHNICAL
UNITED CONSULTING
625 HOLCOMB BRIDGE ROAD
NORCROSS, GA300071
CONTACT:NHAN "YUNG" DANG
(720) 209-0029

BUILDING CANOPY MANUFACTURER
FREY MOSS STRUCTURES
1801 ROCKDALE INDUSTRIAL BLVD.
CONYERS, GEORGIA 30012
CONTACT: JENNIFER GOODMAN
(770) 483-7543 EXT. 151

BUILDING/CANOPY DESIGN
GREENBERG FARROW
3 EXECUTIVE DRIVE, SUITE 150
SOMERSET, NJ 08873
CONTACT: CHRIS CERBO
(732) 537-0832

OWNER
MURPHY OIL USA, INC.
200 PEACH STREET
EL DORADO, AR 71730
PM: GRANT DENNIS
(870) 315-3430

CIVIL ENGINEER
GALLOWAY & COMPANY, INC.
5500 GREENWOOD PLAZA BLVD., SUITE 200
COLORADO SPRINGS, CO 80920
CONTACT: JOE PARK, P.E.
(303) 770-8884

LANDSCAPE
GALLOWAY & COMPANY, INC.
1155 KELLY JOHNSON BLVD., SUITE 305
COLORADO SPRINGS, CO 80920
CONTACT: JON ROMERO, P.L.A.
(719) 308-2532

FIRE DEPARTMENT
SOUTH METRO FIRE RESCUE
9195 E MINERAL AVE
CENTENNIAL, CO 80112
(720) 989-2000

FIRE FLOW DATA

TOTAL FIRE FLOW REQUIRED FOR THIS IS 1,500 GPM MINIMUM @ 20 PSI RESIDUAL PRESSURE.
THIS FLOW MUST BE PROVIDED FROM A MINIMUM OF 1 FIRE HYDRANTS. INDIVIDUALLY, EACH FIRE HYDRANT MUST SUPPLY 1,500 GPM MINIMUM @ 20 PSI RESIDUAL PRESSURE.

CODE USED FOR ANALYSIS: 2021 IFC WITH LONE TREE AMENDMENTS
OCCUPANCY GROUP: M
CONSTRUCTION TYPE: V-B
FIRE FLOW CALCULATION AREA: 2,824 S.F.

BASED ON SURVEY BY:
GALLOWAY & COMPANY, INC.
1155 KELLY JOHNSON BLVD., SUITE 305
COLORADO SPRINGS, CO 80920
EMAIL: JOHNHOUSTON@GALLOWAYUS.COM
PHONE: (719) 337-7232
DATE: 01/29/26

ENGINEERING CERTIFICATION NOTE:

THESE CONSTRUCTION PLANS FOR MURPHY OIL USA, WERE PREPARED UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF LONE TREE, DOUGLAS COUNTY ROADWAY DESIGN AND CONSTRUCTION STANDARDS, STORM DRAINAGE DESIGN AND TECHNICAL CRITERIA, AND THE GRADING, EROSION AND SEDIMENT CONTROL MANUAL.

COLORADO LICENSED JOSEPH D PARK 42470 PROFESSIONAL ENGINEER

JOE PARK
COLORADO P.E. NO: 42470
GALLOWAY & COMPANY, LLC.
5500 GREENWOOD PLAZA BLVD, SUITE 200
GREENWOOD VILLAGE, CO 80111

CITY OF LONE TREE

DATE

THE CONSTRUCTION PLANS HAVE BEEN REVIEWED BY THE CITY OF LONE TREE FOR GRADING AND EROSION CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

JOB NO.: MOC148	
DATE	SHEET NO.
11/05/26	C-0

CITY OF LONE TREE GENERAL NOTES

1. THE CITY OF LONE TREE ENGINEER'S SIGNATURE AFFIX4ED TO THIS DOCUMENT INDICATES THE ENGINEERING DIVISION HAS REVIEWED THE DOCUMENT AND FOUND IT IN GENERAL CONFORMANCE WITH THE CITY OF LONE TREE SUBDIVISION RESOLUTION OR APPROVED VARIANCES TO THOSE REGULATIONS. THE CITY OF LONE TREE ENGINEER, THROUGH ACCEPTANCE OF THIS DOCUMENT, ASSUMES NO RESPONSIBILITY, OTHER THAN STATED ABOVE, FOR THE COMPLETENESS AND/OR ACCURACY OF THESE DOCUMENTS. THE OWNER AND ENGINEER UNDERSTAND THAT THE RESPONSIBILITY FOR THE ENGINEERING ADEQUACY OF THE FACILITIES DEPICTED IN THIS DOCUMENT LIES SOLELY WITH THE REGISTERED PROFESSIONAL ENGINEER WHOSE STAMP AND SIGNATURE IS AFFIXED TO THIS DOCUMENT.
2. ALL ROADWAY CONSTRUCTION SHALL CONFORM TO CURRENT DOUGLAS COUNTY ROADWAY DESIGN AND CONSTRUCTION STANDARDS.
3. ALL MATERIAL AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY THE CITY OF LONE TREE ENGINEERING DIVISION. THE CITY RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS AND WORKMANSHIP THAT DOES NT CONFORM TO ITS STANDARDS AND SPECIFICATIONS.
4. THE CONTRACTOR SHALL NOTIFY THE CITY OF LONE TREE PUBLIC WORKS, INSPECTION SECTION, (303) 662-8112, A MINIMUM OF 48 HOURS AND A MAXIMUM OF 96 HOURS PRIOR TO STARTING CONSTRUCTION, AND/OR BEFORE RESTARTING CONSTRUCTION AFTER A SHUTDOWN OF MORE THAN 10 DAYS.
5. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ACTUAL CONSTRUCTION. FOR INFORMATION, CONTACT: UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT (800) 922-1987 OR 811.
6. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY (SIGNED BY BOTH THE DESIGN AND ENGINEER AND CITY OF LONE TREE) OF THE CONSTRUCTION PLANS AND GESC REPORT AND PLAN, AND ONE (1) COPY OF THE DOUGLAS COUNTY ROADWAY DESIGN AND CONSTRUCTION STANDARDS AT THE JOB SITE AT ALL TIMES.
7. ALL PROPOSED STREET CUTS TO EXISTING PAVEMENTS FOR UTILITIES, STORM SEWER, OR OTHER PURPOSES ARE LISTED AND REFERENCED BELOW:
   - STORM SEWER CONNECTION, SHEET C4.2.
8. A R.O.W./CONSTRUCTION PERMIT MUST BE OBTAINED BEFORE ANY WORK WITHIN EXISTING OR PROPOSED PUBLIC R.O.W. THE PERMIT APPLICATION MUST BE SUBMITTED TO THE CITY OF LONE TREE ENGINEER FOR REVIEW/PROCESSING A MINIMUM OF 7 DAYS PRIOR TO REQUESTED START FOR THE WORK IN THE R.O.W.
9. A PLAN FOR TRAFFIC CONTROL DURING CONSTRUCTION SHALL BE SUBMITTED TO THE CITY OF LONE TREE ENGINEER FOR ACCEPTANCE WITH THE PERMIT APPLICATION. AN EXCAVATION OR PUBLIC IMPROVEMENT CONSTRUCTION PERMIT WILL NOT BE ISSUED WITHOUT AN APPROVED TRAFFIC CONTROL PLAN FOR TRAFFIC CONTROL DURING CONSTRUCTION.
10. THE CONSTRUCTION PLANS SHALL BE CONSIDERED VALID FOR TWO (2) YEARS FROM THE DATE OF CITY OF LONE TREE ACCEPTANCE/APPROVAL. IF APPLICABLE CONSTRUCTION PERMITS HAVE NOT BEN OBTAINED, AND CONSTRUCTION STARTED WITHIN THAT TIME, THESE PLANS SHALL BE VOID AND WILL BE SUBJECT TO RE-REVIEW AND RE-ACCEPTANCE BY THE CITY OF LONE TREE.
11. CONTRACTOR SHALL NOTIFY THE CITY OF LONE TREE ENGINEER INSPECTOR WHEN WORKING OUTSIDE OF THE PUBLIC RIGHT-OF-WAY ON ANY FACILITY WHICH WILL BE CONVEYED TO THE CITY, URBAN DRAINAGE AND FLOOD CONTROL DISTRICT, OR OTHER SPECIAL DISTRICT FOR MAINTENANCE (STORM SEWER, ENERGY DISSIPATERS, DETENTION OUTLET STRUCTURES, OR OTHER DRAINAGE INFRASTRUCTURES). FAILURE TO NOTIFY ENGINEERING INSPECTOR TO ALLOW THEM TO INSPECT THE CONSTRUCTION MAY RESULT IN NON-ACCEPTANCE OF THE FACILITIES/ INFRASTRUCTURE BY CITY AND/OR URBAN DRAINAGE.

CITY OF LONE TREE STRIPING AND SIGNAGE NOTES

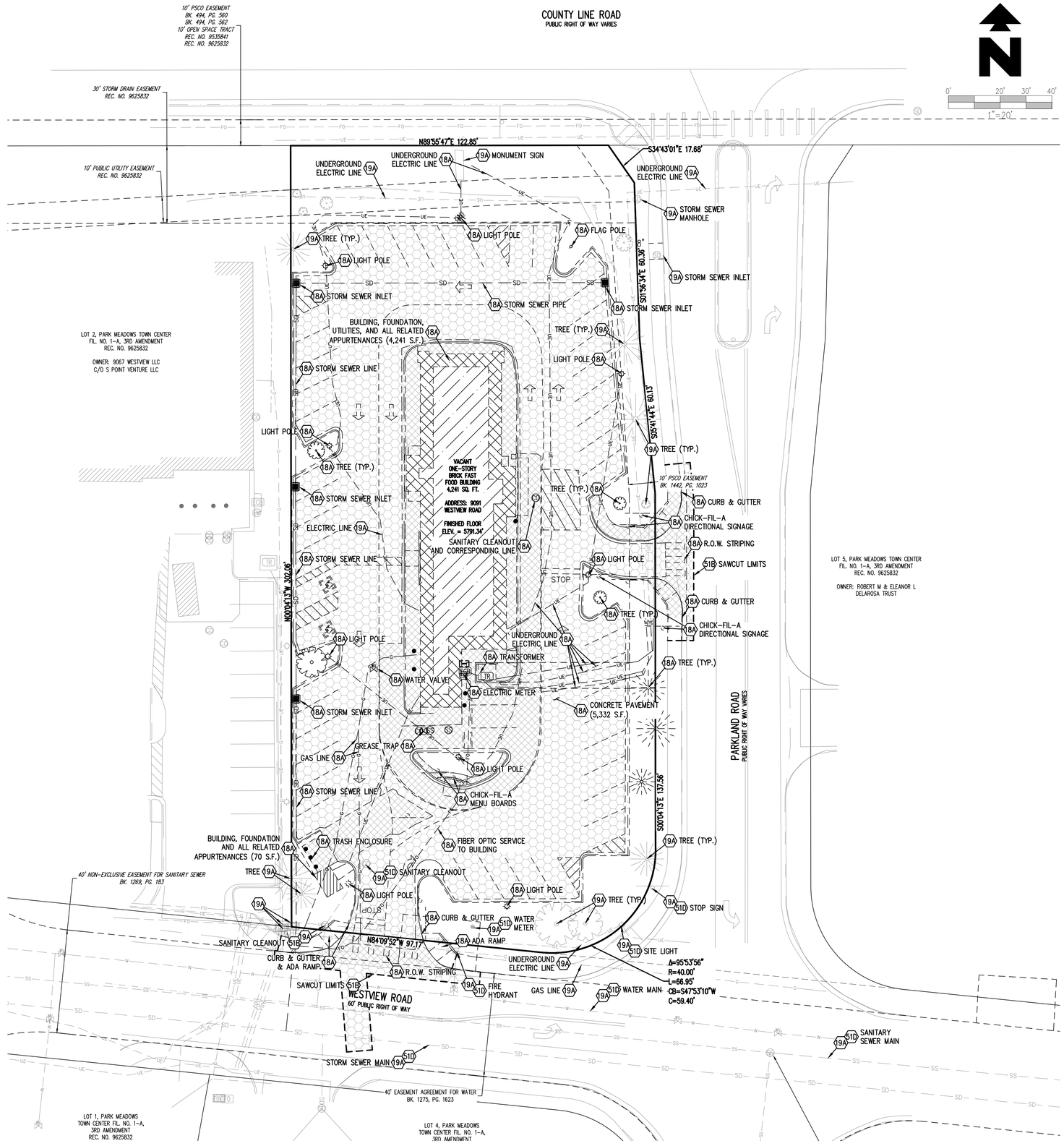
1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT VERSION OF THE FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE "COLORADO SUPPLEMENTAL MUTCD" AND THE DOUGLAS COUNTY "ROAD AND CONSTRUCTION STANDARDS MANUAL". FURTHER SPECIFICATIONS AND ILLUSTRATIONS ARE LOCATED IN THE COLORADO DIVISION OF HIGHWAYS "M AND S STANDARDS".
2. DELINEATION OF ROADWAYS SHALL BE AS SPECIFIED IN THE COLORADO "M AND S MANUAL".
3. SPECIAL CARE SHALL BE TAKEN IN SIGN LOCATION TO ENSURE AN UNOBSTRUCTED VIEW OF EACH SIGN. STREET NAME SIGNS SHALL BE MOUNTED SO THAT THEY CAN BE SEEN FROM ALL DIRECTIONS OF TRAVEL.
4. INSTALLATION OF SIGNS SHALL CONFORM TO THE MUTCD MOUNTING HEIGHT REQUIREMENTS, INCLUDING A 7-FOOT MINIMUM HEIGHT FROM THE BOTTOM OF THE LOWEST SIGN PANEL TO THE TOP GRADE OF SIDEWALK.
5. ALL NEWLY INSTALLED TRAFFIC SIGNS SHALL MEET THE MINIMUM RETRO-REFLECTIVITY AND ILLUMINATION STANDARDS AS SET FORTH BY THE MUTCD (LATEST EDITION). THESE MINIMUM REQUIREMENTS SHALL FALL UNDER THE REQUIREMENTS OF THE TWO (2) YEAR WARRANTY PERIOD FOR NEW CONSTRUCTION.
6. DIAMOND GRADE MATERIAL SHALL BE USED ON ALL STOP SIGNS.
7. THE CONTRACTOR INSTALLING SIGNS IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL UNDERGROUND UTILITIES. LONE TREE PUBLIC WORKS SHALL BE CONTACTED A MINIMUM OF 72 HOURS PRIOR TO INSTALLATION AT 303-662-8112.
8. FOLLOWING INSTALLATION, THE CONTRACTOR SHALL NOTIFY THE CITY OF LONE TREE PUBLIC WORKS DEPARTMENT, 303-662-8112. A FIELD INSPECTION OF LOCATION AND INSTALLATION OF ALL SIGNS SHALL BE PERFORMED BY PUBLIC WORKS. ALL DISCREPANCIES IDENTIFIED DURING THE FIELD INSPECTION MUST BE CORRECTED BEFORE THE TWO-YEAR WARRANTY PERIOD WILL BEGIN.
9. SIGNAGE AND STRIPING HAS BEEN DETERMINED BY INFORMATION AVAILABLE AT THE TIME OF REVIEW. PRIOR TO INITIATION OF THE WARRANTY PERIOD, LONE TREE RESERVES THE RIGHT TO REQUIRE MODIFICATIONS TO EXISTING OR INSTALLATION OF ADDITIONAL SIGNAGE AND/OR STRIPING IF THEY DETERMINE THAT AN UNFORESEEN CONDITION WARRANTS SUCH MODIFICATION ACCORDING TO THE MUTCD OR THE CDOT M AND S STANDARDS. ALL SIGNAGE AND STRIPING SHALL FALL UNDER THE REQUIREMENTS OF THE TWO (2) YEAR WARRANTY PERIOD FOR NEW CONSTRUCTION.
10. FINAL STRIPING AND CROSSWALK LAYOUT TO BE APPROVED BY THE CITY OF LONE TREE PRIOR TO INSTALLATION. LONE TREE PUBLIC WORKS SHALL BE CONTACTED A MINIMUM OF 72 HOURS PRIOR TO INSTALLATION AT 303-662-8112.
11. CROSSWALKS SHALL:
    BE CONSTRUCTED USING 125 MIL PREFORMED THERMOPLASTIC.
    LINE UP WITH THE HANDICAP RAMPS AT BOTH ENDS.
    BE CENTERED ON LANE LINES SO AS TO BE STRADDLED BY VEHICLES.
12. ALL PAVEMENT MARKINGS SHALL BE AS FOLLOWS:
    FOR CONCRETE SURFACE: METHYL METHACRYLATE OR EPOXY PAINT.
    FOR ASPHALT SURFACE: PAINT, 90 MIL PREFORMED THERMOPLASTIC,
    INLAID
    MARKING TAPE, METHYL METHACRYLATE, OR EPOXY PAINT.
    TURN ARROWS AND ONLYS: 125 MIL PREFORMED THERMOPLASTIC.
13. ALL PAVEMENT MARKING SHALL BE PRECEDED BY THE APPROPRIATE SURFACE PREPARATION.
14. ANY SIGNAGE AND/OR OTHER TRAFFIC CONTROL DEVICES REMOVED SHALL BE RETURNED TO THE CITY OF LONE TREE.
15. TYPE III LIGHTED BARRICADES SHALL BE SET AT ENDS OF ROADWAYS, SEPARATING FINISHED AND UNFINISHED CONSTRUCTION AREAS AND WILL BE MAINTAINED BY THE CONTRACTOR/DEVELOPER.

SOUTHGATE SANITARY SEWER – GENERAL NOTES

1. ALL SEWER LINES, MANHOLES, SANITARY SEWER SYSTEM PLANS, AND CONSTRUCTION WILL CONFORM TO CURRENT SOUTHGATE SANITATION DISTRICT SPECIFICATIONS, AND ARE SUBJECT TO CONSTRUCTION OBSERVATION BY SOUTHGATE PERSONNEL OR REPRESENTATIVES. A COPY OF SOUTHGATE'S SPECTIFCATIONS ARE AVAILABLE AT WWW.SOUTHGATEDISTRICTS.ORG.
2. ONLY AFTER CONSTRUCTION PLANS HAE BEEN REVIEWED AND APPROVED BY SOUTHGATE, THE OWNER, THE OWNER'S ENGINEER OR CONTRACTOR, WILL SCHEDULE A PRE-CONSTRUCTION MEETING WITH SOUTHGATE AT LEAST 2 BUSINESS DAYS PRIOR TO THE STARTING OF CONSTRUCTION. APPROVED CONSTRUCTION PLANS, SIGNED BY THE DISTRICT ENGINEER, WILL BE DISTRIBUTED AT THE PRE-CONSTRUCTION MEETING.
3. CONSTRUCTION WILL NOT BE PERMITTED TO START UNTIL ALL EASEMENTS ARE SIGNED AND RECORDED AN THE PRE-CONSTRUCTION MEETING HAS BEEN HELD.
4. ALL PERMITS AND FEES MUST BE PAID PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR THE PROCUREMENT OF ALL PERMITS FOR THE CONSTRUCTION OF MAINS AND SERVICES.
5. SOUTHGATE REQUIRES 2 BUSINESS DAYS NOTICE PRIOR TO START OF CONSTRUCTION AND NOTIFICATION OF A BREAK IN CONSTRUCTION (DUE TO WEATHER, SCHEDULING, ETC.) AND WHEN CONSTRUCTION WILL RESUME.
6. SOUTHGATE REQUIRES 2 BUSINESS DAYS NOTICE PRIOR TO ANY OVERTIME WORKED ON A WEEKDAY. COSTS INCURED BY SOUTHGATE ASSOCIATED WITH CONSTRUCTION OVERTIME WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
7. A MINIMUM OF ONE COPY EACH OF ALL SURVEY CUT SHEETS MUST BE GIVEN TO SOUTHGATE AND TO THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
8. THE CONTRACTOR SHALL CONTACT ALL APPROPRIATE UTILITY COMPANIES FOR NOTIFICATION AND LOCATES PRIOR TO CONSTRUCTION COMMENCING. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES AND COSTS THAT RESULT BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES, INCLUDING SOUTHGATE UTILITIES.
9. SOUTHGATE OR ITS REPRESENTATIVE IS NOT A GUARANTOR OF THE CONSTRUCTION CONTRACTORS' OBLIGATION AND PERFORMANCE OF CONTRACT.
10. OBSERVATIONS OF WORK IN PROGRESS AND ON-SITE VISITS ARE NOT TO BE CONSTRUED AS A GUARANTEE BY SOUTHGATE OR ITS REPRESENTATIVE OF THE CONTRATORS' PERFORMANCE.
11. SOUTHGATE AND/OR ITS REPRESENTATIVE IS NOT RESPONSIBLE FOR SAFETY IN, ON, OR ABOUT THE PROJECT SITE, NOR FOR COMPLIANCE BY THE APPROPRIATE PARTY OF ANY REGULATIONS RELATING THERETO.
12. SOUTHGATE AND/OR ITS REPRESENTATIVE EXERCIESES NO CONTROL OF THE SAFETY OR ADEQUACY OF ANY EQUIPMENT, BUILDING COMPONENTS, SCAFFOLDING, FORMS, OR ANY OTHER WORK AIDS USED IN OR ABOUT THE PROJECT, OR IN THE SUPERINTENDING OF THE SAME.
13. SOUTHGATE REQUIRES 2 BUSINESS DAYS NOTICE PRIOR TO ANY WEEKEND OR NIGHT WORK. COSTS INCURRED BY SOUTHGATE ASSOCIATED WITH WEEKEND AND NIGHT WORK WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. A SET OF APPROVED PLANS SHALL BE MAINTAINED BY THE CONTRACTOR AND KEPT ON SITE AT ALL TIMES. THESE PLANS SHALL BE USED TO MAKE THE "AS-CONSTRUCTED" NOTES DURING THE COURSE OF CONSTRUCTION. THESE NOTES SHALL INCLUDE BUT ARE NOT LIMITED TO, ANY DEVIATIONS FROM THE APPROVED PLANS, NOTING THE TYPES AND LOCATIONS OF THE MATERIALS IN PLACE.
15. ALL REQUIRED TESTING EQUIPMENT WILL BE SUPPLIED BY THE CONTRACTOR. INCLUDING, BUT NOT LIMITED TO, AIR MONITORING AND VENTILATION EQUIPMENT. THE CONTRACTOR MUST SUPPLY ANY ADDITIONAL EQUIPMENT REQUIRED BY OSHA FOR MANHOLE ENTRY, DURING TESTING. SOUTHGATE REQUIRES 2 BUISINESS DAYS NOTICE PRIOR TO TESTING FOR SCHEDULING PURPOSES.
16. THE CONTRACTOR WILL SCHEDULE COMPACTION TESTING WITH THE SOILS CONSULTANT. SEVERAL COMAPCTION TESTS ARE REQUIRED AT INTERSECTIONS WITH OTHER UTILITIES, AT MANHOLES, SERVICE STUBS, AND AT RANDOM LOCATIONS OVER THE SEWER LINE. TESTING WILL BE REQUIRED WHEN SOILS MATIERAL CHANGES. TESING WILL BE REQUIRED FOR EVERY THIRD SERVICE INSTALLATION. THE SOILS ENGINEER IS REQUIRED TO SUBMIT COMPACTION TEST RESULSTS ON A DAILY BASIS.
17. ALL SEWER LINES WILL BE FLUSHED AND CLEANED PRIOR TO ANY VIDEOING ON THE PROJECT. THE WATER USED IN THE FLUSHING AND CLEANING OPERATION SHALL BE PUMPED OUT OF THE SYSTEM. WATER WILL NOT BE DISCHARGED INTO ADJOINING SYSTEM. THE PLUG AT THE DISCHARGE END OF THE PROJECT MUST REMAIN IN PLACE UNTIL THE SYSTEM HAS BEEN ACCEPTED AND NOTICE HAS BEEN GIVEN BY SOUTHGATE FOR THE SYSTEM TO BE PLACED INTO SERVICE
18. ALL SEWER LINES MUST BE JETTED PRIOR TO THE START OF THE WARRANTY. AND MAY BE REQUIRED AGAIN PRIOR TO RELEASE OF WARRANTY BY SOUTHGATE. COSTS OF JETTING WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL PUMPING ASSOCIATED WITH THE LINE JETTING.
19. CONSTRUCTION WATER IS AVAILABLE BY PURCHASING A PERMIT FROM SOUTHGATE WATER DISTRICT AND DENVER WATER. CURRENT DENVER WATER CERTIFICATION IS REQUIRED ON ALL WATER METERS. SOUTHGATE WATER DISTRICT DOES NOT SUPPLY WATER METERS.
20. PIPELINE ACCEPTANCE AND THE START OF THE WARRANTY PERIOD OF THE NEW SEWER MAINS WILL NOT BE CONSIDERED UNTIL ALL REQUIREMENTS FOR ACCEPTANCE HAVE BEEN FULFILLED, INCLUDING:
    A. ALL TESTING IS COMPLETE WITH SATISFACTORY RESULTS
    B. COMPLETE SET OF SIGNED COMPACTION TEST RESULTS IS SUBMITTED TO SOUTHGATE
    C. ALL SEWER CUT SHEETS ARE SUBMITTED TO SOUTHGATE
    D. ALL PUNCH LIST ITEMS ARE COMPLETED TO THE SATISFACTORY OF SOUTHGATE
    E. FIRST LIFT UP PAVING IS COMPLETED, AT A MINIMUM
    F. SURVEYED RECORD DRAWINGS HAVE BEEN SUBMITTED TO AND APPROVED BY SOUTHGATE. REQUIREMENTS FOR RECORD DRAWINGS CAN BE FOUND AT WWW.SOUTHGATEDISTRICTS.ORG
    G. RECORDED ADDRESS PLANT, IF APPLICABLE, IS SUBMITTED TO SOUTHGATE
    H. WARRANTY FUNDS ARE SUBMITTED TO SOUTHGATE IN THE FORM OF A LETTER OF CREDIT OR CHECK EQUAL TO TEN PERCENT (10%) OF THE TOTAL COST OF SEWER IMPROVEMENTS. THE LETTER OR CHECK MUST BE EFFECTIVE FOR A MINIMUM OF FIFTEEN (15) MONTHS FROM START OF WARRANTY.
21. THE NEW SEWER SYSTEM WILL BE TESTED IN ACCORDANCE WITH SOUTHGATE SPECIFICATIONS. ALL REQUIRED TESTING MUST BE COMPLETED PRIOR TO THE START OF WARRANTY.:
    A. VIDEO 100% OF NEW SYSTEM
    B. LOW PRESSURE AIR TEST 100% OF NEW SYSTEM
    C. DEFLECTION TEST 100% OF NEW SYSTEM
22. RELEASE OF SECURITY AND WARRANTY OF FACILITIES IS DEPENDENT UPON SUCCESSFUL COMPLETION OF A MINIMUM OF ONE (1) YEAR WARRANTY AND CONVEYANCE OF DOCUMENTS.
23. THE OWNER IS RESPONSIBLE FOR MAINTENANCE OF THE SYSTEM FROM PIPE ACCEPTANCE TO RELEASE OF SECURITY AND WARRANTY. FAILURE TO MAINTAIN SEWER LINES BY THE TERMS OF THE IMPROVEMENTS AGREEMENT MAY BE CONSIDERED GROUNDS FOR PERMANENT ABANDONMENT OF FACILITIES.
24. SEWER SERVICE TEMPS WILL NOT BE SOLD UNTIL PROJECT ACCEPTANCE IS ACHIEVED.
25. MANHOLE RIMS WILL BE SET AT AN ELEVATION RELATIVE TO THE PAVEMENT, IN ACCORDANCE WITH THE APPROPRIATE CITY, COUNTY, OR STATE HIGHWAY DEPARTMENT STANDARDS. REGARDLESS IF THE MANHOLE IS IN A PAVED OR UNPAVED AREA, A MINIMUM OF FOUR INCHES (4') OF CONCRETE RISER RINGS SHALL BE INSTALLED TO ADJUST ROOM ELEVATIONS TO FINAL GRADE. THE MAXIMUM ACCEPTABLE VERTICAL ADJUSTMENT UTILIZING RISER RINGS IS 12 INCHES (12'). NO: CONCRETE ADJUSTMENT SECTIONS ARE ALSO APPROVED FOR USE IN VERTICAL ADJUSTMENTS OF RING AND COVER. A MINIMUM OF ONE RISER SECTION WILL BE REQUIRED FOR VERTICAL ADJUSTMENT.
26. EXISTING PIPE AT THE POINT OF CONNECTION WILL NOT BE 'BROKEN OUT' AND NO SERVICE CONNECTIONS WILL BE MADE UNTIL THE NEW SERVICE SYSTEM IS ACCEPTED BY SOUTHGATE.
27. THE CONTRACTOR SHALL VERIFY INVERT ELEVATIONS OF EXISTING LINES BY MEANS OF CERTIFIED SURVEY PRIOR TO THE INSTALLATION OF BARREL AND CONE SECTION.
28. THE CONTRACTOR WILL VERIFY EXISTING MANHOLE INVERTS AT PROPOSED POINTS OF CONNECTION, PRIOR TO THE CONSTRUCTION STATEMENT.
29. THE ALIGNMENT SHALL BE STAKED EVERY 25 FEET FOR THE FIRST 100 FEET OUT OF EACH MANHOLE AND EVERY 50 FEET THEREAFTER, ALONG WITH BOTH SIDES OF THE EASEMENT. (FOR USE WITH LASER EQUIPMENT ONLY)
30. TRENCH COMPACTION IN STREET RIGHT OF WAY IS TO CONFORM TO APPLICABLE MUNICIPAL STANDARDS (COLORADO DEPARTMENT OF TRANSPORTATION, ARAPAHOE COUNTY, DOUGLAS COUNTY, CITY OF GREENWOOD VILLAGE, CITY OF CENTENNIAL, OR THE CITY OF LONE TREE).
31. CONNECTION TIES INTO AN EXISTING SEWER LINE SHALL BE PLUGGED WITH A PLUMBERS PLUG IN THE UPSTREAM PIPE AND TIED OFF TO A STEP INSIDE. THIS PLUG SHALL REMAIN IN PLACE UNTIL THE NEW SYSTEM IS ACCEPTED. SOUTHGATE WILL ISSUE NOTICE FOR SERVICE CONNECTIONS AND REMOVAL OF PLUG.
32. ALL PRIVATE SERVICE LINES MUST BE INSPECTED BEFORE BACKFILL – CALL SOUTHGATE AT-303-779-0261 TO SCHEDULE YOUR INSPECTION
33. ALL GREASE AND SAND/OIL INTERCEPTORS MUST BE INSPECTED BEFORE BACKFILL – CALL SOUTHGATE AT-303-779-0261 TO SCHEDULE YOUR INSPECTION

SOUTHGATE WATER SYSTEM – GENERAL NOTES

1. ALL WATER LINES, SYSTEM PLANS, AND CONSTRUCTION WILL CONFORM TO THE CURRENT SOUTHGATE WATER DISTRICT SYSTEM SPECIFICATIONS AND THE DENVER WATER ENGINEERING STANDARDS, AND ARE SUBJECT TO CONSTRUCTION OBSERVATION BY SOUTHGATE PERSONNEL OR A SOUTHGATE REPRESENTATIVE. A COPY OF SOUTHGATE'S SPECIFICATIONS ARE AVAILABLE AT WWW.SOUTHGATEDISTRICTS.ORG.
2. ONLY AFTER CONSTRUCTION PLANS HAVE BEEN REVIEWED AND APPROVED BY SOUTHGATE, THE OWNER, THE OWNER'S ENGINEER OR CONTRACTOR, WILL SCHEDULE A PRE-CONSTRUCTION MEETING WITH SOUTHGATE AT LEAST 2 BUSINESS DAYS PRIOR TO THE START OF CONSTRUCTION. APPROVED CONSTRUCTION PLANS, SIGNED U THE DISTRICT MANAGER AND DISTRICT ENGINEER WILL BE DISTRIBUTED AT THE PRE-CONSTRUCTION MEETING.
3. CONSTRUCTION WILL NOT BE PERMITTED TO START UNTIL ALL EASEMENT ARE SIGNED AND RECORDED AND THE PRE-CONSTRUCTION MEETING HAS BEEN HELD.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE PROCUREMENT OF ALL PERMITS FOR THE CONSTRUCTION OF MAIN AND SERVICES. ALL PERMITS MUST BE APPROVED AND FEES MUST BE PAID PRIOR TO CONSTRUCTION STARTING.
5. SOUTHGATE REQUIRES 2 BUSINESS DAYS NOTICE PRIOR TO START OF CONSTRUCTION AND NOTIFICATIONS OF ANY BREAK IN CONSTRUCTION (DUE TO WEATHER, SCHEDULING, ETC.) AND WHEN CONSTRUCTION WILL RESUME.
6. SOUTHGATE REQUIRES 2 BUSINESS DAYS NOTICES PRIOR TO ANY OVERTIME WORKED ON A WEEKDAY. COSTS INCURRED BY SOUTHGATE ASSOCIATED WITH CONSTRUCTION OVERTIME WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
7. A COPY OF EACH OF ALL SURVEY CUT SHEETS MUST BE SUBMITTED TO SOUTHGATE AND TO THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
8. THE CONTRACTOR SHALL CONTACT ALL APPROPRIATE UTILITY COMPANIES FOR NOTIFICATION AND LOCATES PRIOR TO CONSTRUCTION COMMENCING. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES AND COSTS THAT RESULT BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES, INCLUDING SOUTHGATE UTILITIES.
9. SOUTHGATE OR ITS REPRESENTATIVE IS NOT A GUARANTOR OF THE CONSTRUCTION CONTRACTOR'S OBLIGATIONS AND PERFORMANCE OF CONTRACT.
10. OBSERVATIONS OF WORK IN PROGRESS AND ON-SITE VISITS ARE NOT TO BE CONSTRUED AS A GUARANTEE BY SOUTHGATE OR SOUTHGATE'S REPRESENTATIVE OF THE CONTRACTORS' PERFORMANCE.
11. SOUTHGATE AND SOUTHGATE'S REPRESENTATIVE IS NOT RESPONSIBLE FOR SAFETY IN, ON, OR ABOUT THE PROJECT SITE, NOR FOR COMPLIANCE BY THE APPROPRIATE PARTY OF ANY REGULATIONS RELATING THERETO.
12. SOUTHGATE AND SOUTHGATE'S REPRESENTATIVE EXERCISES NO CONTROL OF THE SAFETY OR ADEQUACY OF ANY EQUIPMENT, BUILDING COMPONENTS, SCAFFOLDING, FORMS, OR ANY OTHER WORK AIDS USED IN OR ABOUT THE PROJECT, OR IN THE SUPERINTENDING OF THE SAME.
13. SOUTHGATE REQUIRES 2 BUSINESS DAYS NOTICE PRIOR TO ANY WEEKEND OR NIGHT WORK. COSTS INCURRED BY SOUTHGATE ASSOCIATED WITH WEEKEND AND NIGHT WORK WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. A SET OF APPROVED PLANS SHALL BE MAINTAINED BY THE CONTRACTOR AND KEPT ON SITE AT ALL TIMES. THESE PLANS SHALL BE USED TO MAKE THE "AS-CONSTRUCTED" NOTES DURING THE COURSE OF CONSTRUCTION. THESE NOTES SHALL INCLUDE BUT ARE NOT LIMITED TO, ANY DEVIATIONS FROM THE APPROVED PLANS, NOTING THE TYPES AND LOCATIONS OF THE MATERIALS IN PLACE.
15. ALL REQUIRES TESTING EQUIPMENT WILL BE SUPPLIED BY THE CONTRACTOR. SOUTHGATE REQUITES 2 BUSINESS DAYS NOTICE PRIOR TO TESTING FOR SCHEDULING PURPOSES.
16. THE CONTRACTOR SHALL SCHEDULE COMPACTION TESTING WITH THE SOILS CONSULTANT. SEVERAL COMPACTION TESTS ARE REQUIRED AT INTERSECTIONS WITH OTHER UTILITIES, SERVICE STUBS, AND AT RANDOM LOCATIONS OVER THE WATER LINE. TESTING WILL BE REQUIRED WHEN SOILS MATERIAL CHANGES. TESTING WILL BE REQUIRED FOR EVERY THIRD SERVICE INSTALLATION. THE SOILS ENGINEER IS REQUITED TO SUBMIT COMPACTION TEST RESULTS ON A DAILY BASIS. THE OWNER/DEVELOPER IS RESPONSIBLE FOR COSTS ASSOCIATE WITH COMPACTION TESTING.
17. CONSTRUCTION WATER IS AVAILABLE BY PURCHASING A PERMIT FROM SOUTHGATE AND DENVER WATER. CURRENT DENVER WATER CERTIFICATION IS REQUIRED ON ALL WATER METERS. SOUTHGATE DOES NOT SUPPLY WATER METERS.
18. PIPELINE ACCEPTANCE AND THE START OF THE WARRANTY PERIOD OF THE NEW WATER MAINS WILL NOT BE CONSIDERED UNTIL ALL REQUIREMENTS FOR ACCEPTANCE HAVE BEEN FULFILLED, INCLUDING:
    18.1. ALL TESTING IS COMPLETE WITH SATISFACTORY RESULTS
    18.2. COMPLETE SET OF SIGNED COMPACTION TEST RESULTS IS SUBMITTED TO SOUTHGATE AND THE APPLICABLE CITY/COUNTY
    18.3. ALL PUNCH LIST ITEMS ARE COMPLETED TO THE SATISFACTORY OF SOUTHGATE
    18.4. FIST LIFT OF PAVING IS COMPLETED, AT A MINIMUM
    18.5. SURVEYED RECORD DRAWINGS HAVE BEEN SUBMITTED TO AND APPROVED BY SOUTHGATE. CONTACT THE SOUTHGATE ENGINEERING DEPARTMENT FOR REQUIREMENTS PRIOR TO SUBMITTING RECORD DRAWINGS
    18.6. RECORDED ADDRESS PLAT, IF APPLICABLE I, IS SUBMITTED TO SOUTHGATE
    18.7. WARRANTY FUNDS ARE SUBMITTED TO SOUTHGATE IN THE FORM OF A LETTER OF CREDIT OR CHECK EQUAL TO TEN PERCENT (10%) OF THE TOTAL COST OF WATER IMPROVEMENTS. THE LETTER OR CHECK WILL BE EFFECTIVE FOR A MINIMUM OF FIFTEEN (15) MONTHS FROM START OF WARRANTY PERIOD.
19. THEORETICAL STATIC WATER PRESSURES ARE ESTIMATED TO RANGE FROM __ PSI AT USGS ELEVATION _____ TO _____ PSI AT USGS ELEVATION _____. SOUTHGATE HAS PROVIDED ONLY THE HYDRAULIC GRADIENT ELEVATION. THIS HYDRAULIC GRADIENT, OF WHICH WAS PROVIDED AT THE TIME OF PLAN REVIEW, MAY CHANGE IN THE FUTURE AS OVERALL WATER SYSTEM OPERATIONS WARRANT.
20. THE LINE SHALL BE CHLORINATED IN ACCORDANCE WITH THE REQUIREMENTS OF DENVER WATER ENGINEERING STANDARDS AND THE COLORADO STATE BOARD OF HEALTH. CHLORINATION SHALL OCCUR PRIOR TO HYDROSTATIC TESTING.
21. CHLORINE TESTS BY A STATE CERTIFIED LAB WILL BE TAKEN EVERY 1000 FEET OF PIPE INSTALLED. THE RESULTS MUST BE SUBMITTED TO SOUTHGATE AND DENVER WATER.
22. ALL NEW WATER LINES WILL BE HYDROSTATIC PRESSURE TESTED. THE TESTING EQUIPMENT AND/OR ANY COSTS SHALL BE PROVIDED BY THE CONTRACTOR. THE TEST WILL BE CONDUCTED AT 50 PSI ABOVE NORMAL OPERATING PRESSURE OR AT 150 PSI, WHICHEVER IS GREATER. UPON WRITTEN RECORD OF A PASSING CHLORINE TEST, AND SATISFACTORY COMPACTION TEST RESULTS, SOUTHGATE WILL WITNESS PRESSURE TESTING AT THE CONTRACTOR'S CONVENIENCE.
23. ALL NEW WATER LINES WILL REQUIRE A CLEAR WATER TEST TAKEN BU A STATE CERTIFIED LAB FOR BACTERIOLOGICAL RESULTS. THE RESULTS MUST BE SUBMITTED TO SOUTHGATE AND DENVER WATER. THE RESULTS MUST BE SUBMITTED TO SOUTHGATE AND DENVER WATER. CLEAR WATER TESTS WILL BE TAKEN AT THE CONTRACTOR'S EXPENSE PRIOR PIPELINE ACCEPTANCE, START OF THE WARRANTY PERIOD, AND PRIOR TO THE RELEASING TAPS OR CONNECTION TO EXISTING PIPE.
24. ADDITIONAL TESTING MAY BE REQUITED AT THE DISCRETION OF SOUTHGATE.
25. SOUTH METRO FIRE RESCUE AUTHORITY WILL ALSO INSPECT FIRELINE AND WILL OBSERVE TESTING
26. EXISTING VALVES OWNED AND OPERATED BU SOUTHGATE MAY ONLY BE OPERATED BY SOUTHGATE PERSONNEL. VALVES INSTALLED BY THE CONTRACTOR MAY BE OPERATED UNTIL SOUTHGATE ACCEPTS THE SYSTEM. COORDINATE WITH SOUTHGATE A MINIMUM OF 2 BUSINESS DAYS BEFORE EXISTING VALVES ARE TO BE OPERATED.
27. RELEASE OF SECURITY AND WARRANTY OF FACILITIES IS DEPENDENT UPON SUCCESSFUL COMPLETION OF A MINIMUM OF ONE (1) YEAR WARRANTY PERIOD AND CONVEYANCE OF DOCUMENTS.
28. THE OWNER IS RESPONSIBLE FOR MAINTENANCE OF THE SYSTEM FROM PIPE ACCEPTANCE TO RELEASE OF SECURITY AND WARRANTY. FAILURE TO MAINTAIN WATER LINES BY THE TERMS OF THE IMPROVEMENTS AGREEMENT MAY BE CONSIDERED GROUNDS FOR PERMANENT ABANDONMENT OF FACILITIES.
29. STUB-IN AGREEMENTS ARE AVAILABLE THRU SOUTHGATE AND DENVER WATER ONLY AFTER COMPLETED TESTING AND MAIN LINE INSTALLATION, IT MAY BE OBTAINED PRIOR TO PIPELINE ACCEPTANCE AND START OF THE WARRANTY PERIOD.
30. WATER SERVICE TAPS WILL NOT BE SOLD UNTIL PROJECT ACCEPTANCE IS ACHIEVED.
31. ONLY THE FOLLOWING FIRE HYDRANTS ARE PERMITTED BY SOUTHGATE:
    31.1. MEULLER CENTURION MODEL A-423
    31.2. WATEROUS PACER MODEL WB-67 WITH BRONZE BUSHED SHOE AND SHAFT COUPLING
    31.3. AVK SERIES 27
32. ONLY ONE (1) CONNECTION POINT IS PERMITTED TO EXISTING SYSTEM PRIOR TO COMPLETION OF TESTING
33. THE CONTRACTOR SHALL VERIFY ELEVATIONS OF EXISTING LINES AND CONNECTION POINTS BY MEANS OF CERTIFIED SURVEY PRIOR TO STAKING AND INSTALLATION
34. THE ALIGNMENT SHALL BE STAKED AND GRADED EVERY FIFTY (50) FEET. ALL FITTINGS AND VERTICAL DEPRESSIONS ARE TO BE STAKED. THE FIRE HYDRANTS WILL BE STAKED AND GRADED TO THE BOTTOM OF FLANGE FITTING. THIS GRADE WILL BE SET THREE (3) INCHES ABOVE PROPOSED GRADING FINISH ELEVATIONS. STAKE BOTH SIDES OF EASEMENTS WHERE THE WATER LINE IS NOT LOCATED IN PAVED AREAS.
35. WATER LINES SHALL HAVE A MINIMUM OF FOUR AND ONE-HALF (4.5) FEET OF CO



EXISTING

- SD — EXISTING STORM SEWER (LESS THAN 12"ø)
- SS — EXISTING SANITARY SEWER
- W — EXISTING WATER
- UE — EXISTING UNDERGROUND ELECTRIC
- OHE — EXISTING OVERHEAD ELECTRIC
- FO — EXISTING FIBER OPTIC
- G — EXISTING GAS
- EXISTING STREET LIGHT
- TR — EXISTING TRANSFORMER
- EM — EXISTING ELECTRIC METER
- EB — EXISTING ELECTRIC BOX
- ECB — EXISTING ELECTRIC CONTROL BOX
- FO — EXISTING FIBER OPTIC BOX
- GM — EXISTING GAS METER
- SS — EXISTING SANITARY SEWER MANHOLE
- WV — EXISTING WATER VALVE
- EXISTING STORM INLET
- EXISTING FIRE HYDRANT
- EXISTING SIGN
- WM — EXISTING WATER METER
- FOV — EXISTING FIBER OPTIC VAULT
- SD — EXISTING SANITARY STORM MANHOLE
- CO — EXISTING SANITARY CLEAN OUT
- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED

PROPOSED

- BOUNDARY LINE
- EXISTING ASPHALT TO BE REMOVED
- EXISTING CONCRETE TO BE REMOVED

GENERAL DEMOLITION NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF THE EXISTING STRUCTURES, RELATED UTILITIES, PAVING, UNDERGROUND STORAGE TANKS AND ANY OTHER EXISTING IMPROVEMENTS AS NOTED.
2. CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM PREVIOUS AND CURRENT DEMOLITION OPERATIONS. DISPOSAL WILL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND/OR FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.
3. THE GENERAL CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT. THE CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGES TO THE ADJACENT PROPERTIES OCCURRING DURING THE CONSTRUCTION PHASES OF THIS PROJECT.
4. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES.
5. DEMO ALL SIDEWALKS TO NEAREST JOINT.

!!!ATTENTION!!!

ADDITIONAL UTILITIES MAY BE PRESENT ON THE SITE THAT HAVE NOT BEEN PICKED UP BY SURVEY, PLEASE CONTACT THE ENGINEER PRIOR TO DEMOLITION OF ANY UTILITIES NOT SHOWN ON THIS PLAN.

DEMOLITION NOTES

18A	EXISTING TO BE REMOVED
19A	EXISTING TO REMAIN
19B	EXISTING TO REMAIN AND ABANDON
51B	LIMITS OF SAWCUT AND PAVEMENT REMOVAL
51D	PROTECT EXISTING STRUCTURE AND/OR PIPES DURING DEMOLITION AND CONSTRUCTION PHASES

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

THESE DRAWINGS DO NOT INCLUDE COMPONENTS FOR CONSTRUCTION SAFETY

CAUTION – NOTICE TO CONTRACTOR

1. ALL UTILITY LOCATIONS SHOWN ARE BASED ON MAPS PROVIDED BY THE APPROPRIATE UTILITY COMPANY AND FIELD SURFACE EVIDENCE AT THE TIME OF SURVEY AND IS TO BE CONSIDERED AN APPROXIMATE LOCATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF ALL UTILITIES, PUBLIC OR PRIVATE, WHETHER SHOWN ON THE PLANS OR NOT, PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
2. WHERE A PROPOSED UTILITY CROSSES AN EXISTING UTILITY, IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF SUCH EXISTING UTILITY, EITHER THROUGH POTHOLING OR ALTERNATIVE METHOD. REPORT INFORMATION TO THE ENGINEER PRIOR TO CONSTRUCTION.

811 Know what's **below.** **Call** before you dig.

CITY OF LONE TREE

DATE

THE CONSTRUCTION PLANS HAVE BEEN REVIEWED BY THE CITY OF LONE TREE FOR SITE IMPROVEMENTS, STORM SEWER, GRADING AND EROSION CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

SHEET NO. C-2.0 Sheet 3 of 29

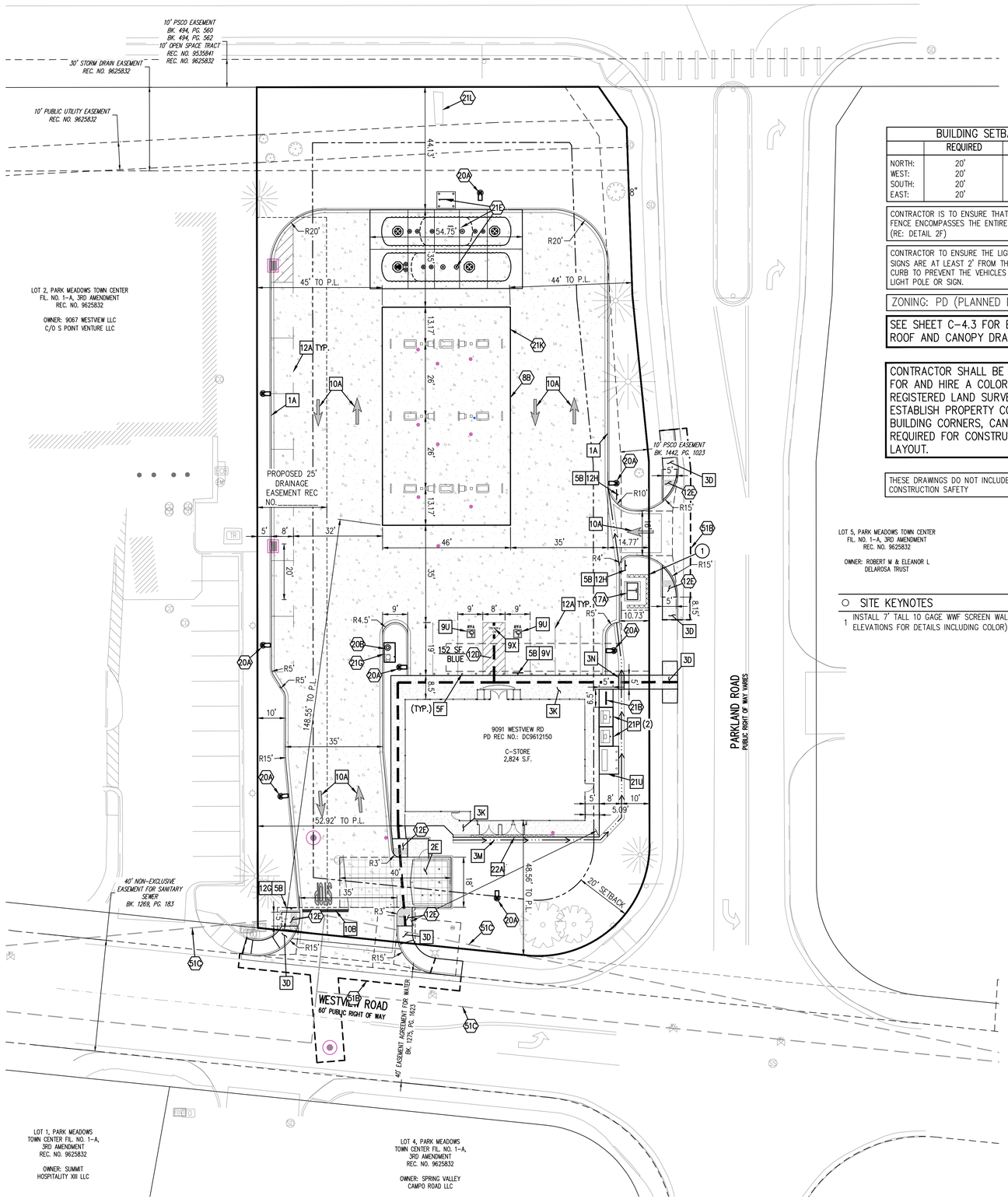
COLORADO LICENSED JOSEPH D PARK 42470 PROFESSIONAL ENGINEER

CD 4TH SUBMITTAL	11/05/26	MOC148	PRN	JDP	PM	SE	DES	DMH	DRW
	DATE								

DEMOLITION PLAN
MURPHY USA (NTI)
9091 WESTVIEW RD
LONE TREE COLORADO

Galloway
5500 Greenwood Plaza Blvd, Suite 200
Greenwood Village, CO 80111
303.770.8884 • GallowayUS.com

MURPHY OIL USA, INC.
MURPHY USA
200 PEACH STREET
EL DORADO, AR 71730



BUILDING SETBACKS

	REQUIRED	PROVIDED
NORTH:	20'	200.96'
WEST:	20'	52.92'
SOUTH:	20'	47'
EAST:	20'	23.02'

CONTRACTOR IS TO ENSURE THAT THE CONSTRUCTION FENCE ENCOMPASSES THE ENTIRE WORK AREA. (RE: DETAIL 2F)

CONTRACTOR TO ENSURE THE LIGHT POLES AND SIGNS ARE AT LEAST 2' FROM THE BACK OF THE CURB TO PREVENT THE VEHICLES STRIKING THE LIGHT POLE OR SIGN.

ZONING: PD (PLANNED DEVELOPMENT)

SEE SHEET C-4.3 FOR BUILDING ROOF AND CANOPY DRAINAGE

CONTRACTOR SHALL BE RESPONSIBLE FOR AND HIRE A COLORADO REGISTERED LAND SURVEYOR TO ESTABLISH PROPERTY CORNERS, BUILDING CORNERS, CANOPY, ETC. AS REQUIRED FOR CONSTRUCTION LAYOUT.

THESE DRAWINGS DO NOT INCLUDE COMPONENTS FOR CONSTRUCTION SAFETY

SITE KEYNOTES

1 INSTALL 7' TALL 10 GAGE WWF SCREEN WALL (SEE ARCHITECTURAL ELEVATIONS FOR DETAILS INCLUDING COLOR).

PRE-CONSTRUCTION IMPERVIOUS SITE RATIO (ISR)

AREA	SQUARE FEET	%
IMPERVIOUS (ROOF AND PAVING)	32,426	76.6
LANDSCAPE AREA	9,906	23.4
GROSS SITE	42,332	100

POST-CONSTRUCTION IMPERVIOUS SITE RATIO (ISR)

AREA	SQUARE FEET	%
IMPERVIOUS (ROOF AND PAVING)	30,248	71.4
LANDSCAPE AREA	12,084	28.6
GROSS SITE	42,332	100

SITE NOTES

8B	OVERHEAD CANOPY (TYP. PER CANOPY PLANS)
12A	4" YELLOW LANE STRIPE (SEE SIZE INDICATED AT SYMBOL)
12D	4" WIDE PAINTED STRIPES. 2' O.C. @ 45° (SEE SIZE INDICATED AT SYMBOL)
12E	PROPOSED RAMP (SEE ENLARGED GRADING PLANS FOR DETAILS)
17A	TRANSFORMER
20A	SITE LIGHT
20A	SITE LIGHT
21B	BIKE RACK
21E	UNDERGROUND STORAGE TANKS (1-25,000 GAL. & 1-26,000 GAL.)
21G	AIR/VACUUM UNIT WITH 4'X7' CONCRETE SLAB
21K	MURPHY EXPRESS ID SIGN PER APPROVED RENDERING
21L	PRICE SIGN PER APPROVED ELEVATION
51B	LIMITS OF SAWCUT AND PAVEMENT REMOVAL
51C	SIGHT TRIANGLE

SITE DETAILS

1A	INTEGRAL CONCRETE CURB
2E	DUMPSTER ENCLOSURE
3D	CONCRETE SIDEWALK
3K	CONCRETE SIDEWALK AROUND BUILDING
3M	2' CONCRETE PAN
3N	2' CURB CHASE
5B	TRAFFIC SIGN IN BOLLARD
5F	STEEL BOLLARD W/ COVER (SINGLE)
9U	ACCESSIBLE PARKING SYMBOL (SEE PAINT COLOR INDICATED AT SYMBOL)
9V	ACCESSIBLE / VAN ACCESSIBLE PARKING SIGN MOUNTED IN BOLLARD
9X	"NO PARKING" PAINTED ON PAVEMENT
10A	TRAFFIC FLOW ARROW
10B	STOP BAR
12A	4" YELLOW LANE STRIPE (SEE SIZE INDICATED AT SYMBOL)
12G	"STOP" SIGN
12H	"DO NOT ENTER" SIGN
21P	5'x7' ICE UNIT (SEE NUMBER INDICATED AT SYMBOL)
21U	7'x10' CONCRETE SLAB FOR PROPANE TANKS
22A	SCREENING WALL (SEE BUILDING PLANS FOR DETAILS)

PARKING INFORMATION: MURPHY OIL

DESCRIPTION	BUILDING AREA (S.F.)	REQUIRED:				
		RATIO	SPACES			
			REGULAR	UNDER CANOPY	ACCESSIBLE	TOTAL
FUELING STATION	2,824		26 (PER REQUESTED VARIANCE)			
STALL DIMENSIONS:		PROVIDED:				
		RATIO	SPACES			
9'X19' (MIN.)			REGULAR	UNDER CANOPY	ACCESSIBLE	TOTAL
			12	12	2	26

NO. OF FUEL ISLANDS: 6
NO. OF VEHICLE FUELING POINTS: 12

CAUTION - NOTICE TO CONTRACTOR

1. ALL UTILITY LOCATIONS SHOWN ARE BASED ON MAPS PROVIDED BY THE APPROPRIATE UTILITY COMPANY AND FIELD SURFACE EVIDENCE AT THE TIME OF SURVEY AND IS TO BE CONSIDERED AN APPROXIMATE LOCATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF ALL UTILITIES, PUBLIC OR PRIVATE, WHETHER SHOWN ON THE PLANS OR NOT, PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
2. WHERE A PROPOSED UTILITY CROSSES AN EXISTING UTILITY, IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF SUCH EXISTING UTILITY, EITHER THROUGH POTHOLING OR ALTERNATIVE METHOD. REPORT INFORMATION TO THE ENGINEER PRIOR TO CONSTRUCTION.

811 Know what's **below.** **Call** before you dig.

EXISTING

- EXISTING STREET LIGHT
- EXISTING TRANSFORMER
- EXISTING ELECTRIC METER
- EXISTING ELECTRIC BOX
- EXISTING ELECTRIC CONTROL BOX
- EXISTING FIBER OPTIC BOX
- EXISTING GAS METER
- EXISTING SANITARY SEWER MANHOLE
- EXISTING WATER VALVE
- EXISTING STORM INLET
- EXISTING FIRE HYDRANT
- EXISTING SIGN
- EXISTING WATER METER
- EXISTING FIBER OPTIC VAULT
- EXISTING SANITARY STORM MANHOLE
- EXISTING SANITARY CLEAN OUT
- EXISTING TREE

SITE LEGEND

- PROPERTY BOUNDARY LINE
- ADJACENT PROPERTY BOUNDARY LINE
- EXISTING EASEMENT LINE
- PROPOSED EASEMENT LINE
- 20' SETBACK LINE
- SIGHT TRIANGLE
- PROPOSED SAWCUT LINE
- PROPOSED SWALE FLOWLINE
- PROPOSED CURB AND GUTTER
- EXISTING CURB AND GUTTER
- ADA PATH OF TRAVEL
- SIGHT TRIANGLE
- PROPOSED SIGN
- PROPOSED PIPE BOLLARD
- PROPOSED ADA PARKING SYMBOL
- PROPOSED DETECTABLE WARNING TRUNCATED DOMES
- PROPOSED TRASH RECEPTACLE
- PROPOSED STANDARD DUTY CONCRETE PAVEMENT
- PROPOSED HEAVY DUTY CONCRETE PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- PROPOSED UNDERGROUND STORAGE TANKS

GENERAL SITE NOTES

1. ALL DIMENSIONS SHOWN ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
2. ALL CURB RETURN RADII SHALL BE 5', AS SHOWN TYPICAL ON THIS PLAN, UNLESS OTHERWISE NOTED.
3. UNLESS OTHERWISE SHOWN, CALLED OUT OR SPECIFIED HEREON: ALL CURB AND GUTTER ADJACENT TO PAVING SHALL BE INSTALLED PER DETAIL.
4. PAVEMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE PAVING PLAN OVER THE ENTIRE PARKING LOT AREA AND ALL APPROACH DRIVES.
5. SEE ASSOCIATED PLANS FOR CANOPY, COLUMN, DISPENSER ISLAND DETAILS AND LAYOUT.
6. CONTRACTOR SHALL BEGIN CONSTRUCTION OF ANY LIGHT POLE BASES FOR RELOCATED LIGHT FIXTURES AND RELOCATION OF ELECTRICAL SYSTEM AS SOON AS DEMOLITION BEGINS. CONTRACTOR SHALL BE AWARE THAT INTERRUPTION OF POWER TO ANY LIGHT POLES OR SIGNS SHALL NOT EXCEED 24 HOURS.
7. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED SMOOTH AND FOUR INCHES OF TOPSOIL APPLIED. IF ADEQUATE TOPSOIL IS NOT AVAILABLE ON SITE, THE CONTRACTOR SHALL PROVIDE TOPSOIL, APPROVED BY THE OWNER, AS NEEDED. THE AREA SHALL THEN BE SEEDED/SODDED, FERTILIZED, MULCHED, WATERED AND MAINTAINED UNTIL HARDY GRASS GROWTH IS ESTABLISHED IN ALL AREAS. ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE PROJECT SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
8. CONTRACTOR SHALL PURCHASE AND INSTALL A MAILBOX AND SHALL COORDINATE LOCATION OF MAILBOX WITH MURPHY CONSTRUCTION MANAGER AND/OR ON-SITE REPRESENTATIVE AND LOCAL POSTMASTER.
9. ALL PROPOSED PAVEMENT STRIPING OR MARKINGS SHALL FOLLOW THE SPECIFICATIONS FOR PAINT INCLUDED IN DETAIL 10A.

CITY OF LONE TREE

DATE

THE CONSTRUCTION PLANS HAVE BEEN REVIEWED BY THE CITY OF LONE TREE FOR SITE IMPROVEMENTS, STORM SEWER, GRADING AND EROSION CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

SHEET NO. C-3.0 Sheet 4 of 29

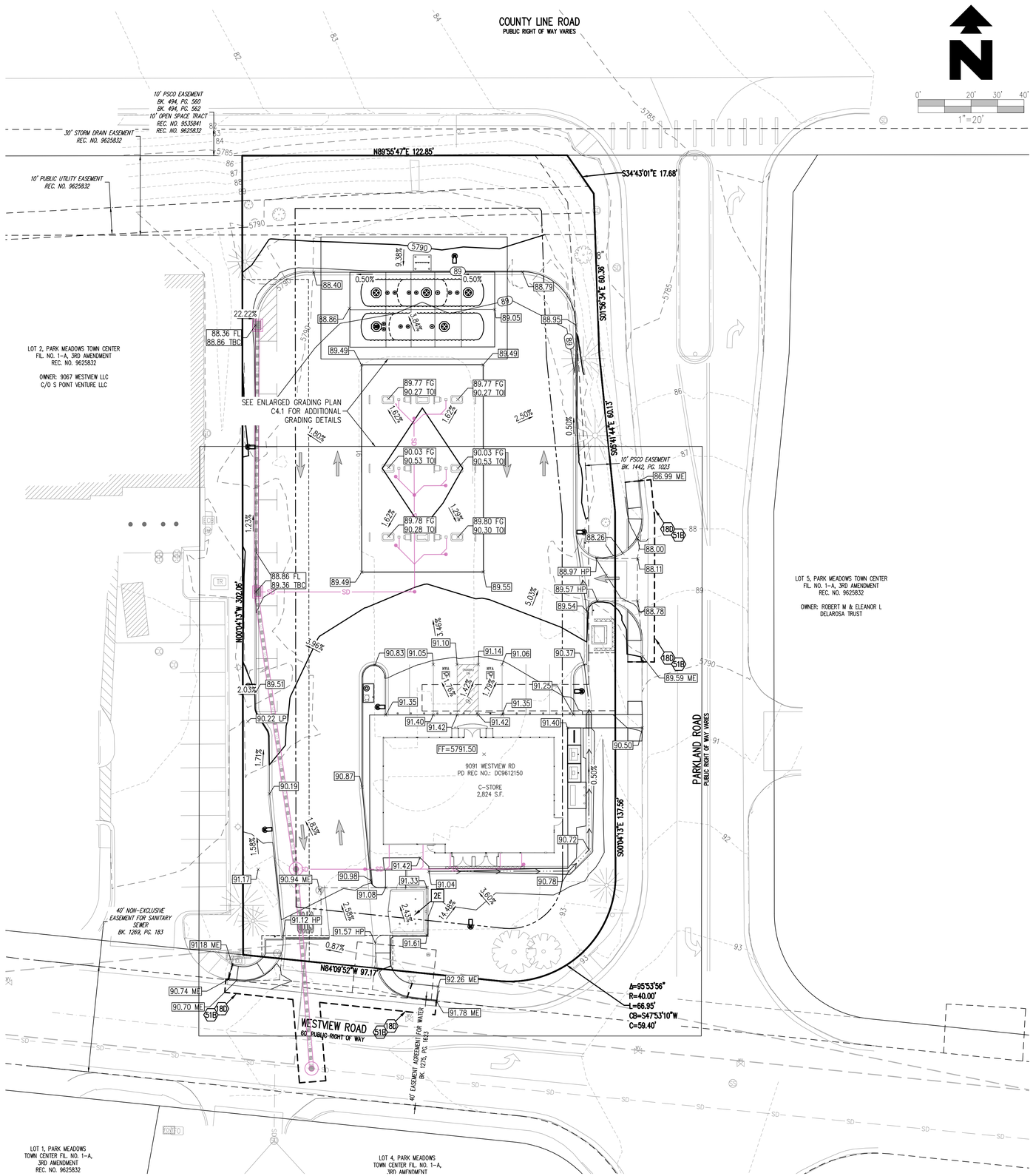
COLORADO LICENSED JOSEPH D PARK 42470 PROFESSIONAL ENGINEER 11/10/2026

CD 4TH SUBMITTAL	11/05/26	MOC148	JDP	SE	DMH
	DATE	PRN	PM	DES	DRW

SITE PLAN
MURPHY USA (NTI)
9091 WESTVIEW RD
LONE TREE COLORADO

Galloway
5500 Greenwood Plaza Blvd., Suite 200
Greenwood Village, CO 80111
303.770.8884 • GallowayUS.com

MURPHY OIL USA, INC.
200 PEACH STREET
EL DORADO, AR 71730



GENERAL GRADING NOTES

1. PRIOR TO INSTALLATION OF STORM OR SANITARY SEWER, WATER MAIN, OR ANY OTHER UTILITIES, THE CONTRACTOR SHALL EXCAVATE, VERIFY, AND CALCULATE ALL POINTS OF CONNECTION AND ALL UTILITY CROSSING AND INFORM THE OWNER AND THE ENGINEER OF ANY CONFLICTS OR REQUIRED DEVIATIONS FROM THE PLAN PRIOR TO CONSTRUCTION. NOTIFICATION SHALL BE MADE A MINIMUM OF 72 HOURS PRIOR TO CONSTRUCTION, THE ENGINEER AND ITS CLIENTS SHALL BE HELD HARMLESS IN THE EVENT THAT THE CONTRACTOR FAILS TO MAKE SUCH NOTIFICATION.
2. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED SMOOTH AND GROUND COVER ESTABLISHED. ANY RELOCATED TREES SHALL BE MAINTAINED UNTIL SUCH POINT AS TREE IS RE-ESTABLISHED. ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE PROJECT SHALL BE STABILIZE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES.
4. REFER TO GEOTECHINCAL REPORT FOR SPECIFIC SITE SOIL CONDITIONS AND CONSIDERATIONS.
5. CONTRACTOR SHALL COMPLY COMPLETELY WITH THE LATEST STANDARDS OF OSHA DIRECTIVES OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING AND OTHER MEANS OF PROTECTION. THIS IS TO INCLUDE, BUT NOT LIMITED FOR ACCESS AND EGRESS FROM ALL EXCAVATION AND TRENCHING. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH PERFORMANCE CRITERIA AS REQUIRED BY OSHA.
6. ALL HDPE PIPE IN SANDY OR HIGHLY EROSIVE, OR EXPANSIVE SOILS SHALL BE N-12 WT IB (OR EQUIVALENT WITH SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS. 4"-48" PIPE SHALL MEET ASTM F2648 (OR AASHTO M252 TYPE S) REQUIREMENTS AND SHALL HAVE A MINIMUM MANNINGS "n" DESIGN VALUE OF 0.012. JOINTS SHALL BE WATERTIGHT ACCORDING TO ASTM D3212 (OR AASHTO M252, M294) REQUIREMENTS. GASKETS SHALL MEET THE REQUIREMENTS OF ASTM F477. JOINT PERFORMANCE, FITTINGS, MATERIAL PROPERTIES AND INSTALLATION SHALL BE DONE PER THE COMPLETE ADS SPECIFICATION FOR ADS N-12 WE IB PIPE FOUND IN THE ADS, INC. DRAINAGE HANDBOOK, LATEST EDITION.
7. ALL OTHER HDPE PIPE SHALL BE N-12 ST IB (OR EQUIVALENT WITH SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS. 4"-48" SHALL MEET ASTM F2648 (OR AASHTO M252 TYPE S OR SP) REQUIREMENTS AND SHALL HAVE A MINIMUM MANNINGS "n" DESIGN VALUE OF 0.012. JOINT PERFORMANCE, FITTINGS, MATERIAL PROPERTIES AND INSTALLATION SHALL BE DONE PER THE COMPLETE ADS SPECIFICATIONS FOR ADS N-12 ST IB PIPE FOUND IN THE ADS, INC. HAND BOOK, LATEST EDITION.
8. IF USING HDPE PERFORATED PIPE FOR SUBSURFACE DRAINAGE AND DETENTION/RETENTION SYSTEMS, THE PERFORATION SHALL MEET THE AASHTO CLASS II STANDARD PERFORATION PATTERN REQUIREMENTS.
9. STORM SEWER LINES 18"-54" DIAMETER ARE TO BE REINFORCED CONCRETE PIPE ACCORDING TO ASTM C-76 (WATERTIGHT) UNLESS OTHERWISE INDICATED.
10. CORRUGATED METAL PIPE, WHERE SPECIFICALLY SPECIFIED ON PLAN, SHALL BE TYPE II OF AASHTO M 36 GALVANIZED WITH TYPE 3 JOINTS.
11. CONTRACTOR SHALL ESTABLISH GRADES OF FINISH PAVEMENT TO ENSURE PROPER (POSITIVE) DRAINAGE AND PREVENT PUDDLING OF WATER, SPECIALLY IN PEDESTRIAN WALKWAYS. UNPAVED AREAS OF SITE SHALL ALSO BE GRADED FOR POSITIVE DRAINAGE. CONSULT ENGINEER SHOULD THEIR BE CONFLICTS WITH CRITICAL GRADES SHOWN HEREON.
12. CONTRACTOR SHALL VERIFY ACTUAL FINISH FLOOR ELEVATION AFTER BUILDING SET AND NOTIFY ENGINEER AND PM WITHIN 48 HOURS OF ANY DISCREPANCY.
13. PIPE JOINTS SHALL BE WRAPPED WITH GEOTEXTILE FABRIC (LAPPED 18").
14. CONTRACTOR TO CONFIRM BUILDING AND CANOPY FOOTER ELEVATIONS PRIOR TO BUILDING BEING SET.

GRADING NOTES

18D	MATCH EXISTING PAVEMENT ELEVATIONS
51B	LIMITS OF SAWCUT & PAVEMENT REMOVAL

GRADING DETAILS

28A	STORM SEWER TRENCH & BEDDING
2E	DUMPSTER ENCLOSURE

CAUTION – NOTICE TO CONTRACTOR

1. ALL UTILITY LOCATIONS SHOWN ARE BASED ON MAPS PROVIDED BY THE APPROPRIATE UTILITY COMPANY AND FIELD SURFACE EVIDENCE AT THE TIME OF SURVEY AND IS TO BE CONSIDERED AN APPROXIMATE LOCATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF ALL UTILITIES, PUBLIC OR PRIVATE, WHETHER SHOWN ON THE PLANS OR NOT, PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
2. WHERE A PROPOSED UTILITY CROSSES AN EXISTING UTILITY, IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF SUCH EXISTING UTILITY, EITHER THROUGH POTHOLING OR ALTERNATIVE METHOD. REPORT INFORMATION TO THE ENGINEER PRIOR TO CONSTRUCTION.

811 Know what's **below.** **Call** before you dig.

EXISTING

- EXISTING MAJOR CONTOUR (5460)
- EXISTING MINOR CONTOUR (52)
- EXISTING STORM SEWER (SD)
- PROPOSED STORM SEWER (SD)
- EXISTING STREET LIGHT
- EXISTING TRANSFORMER (TR)
- EXISTING ELECTRIC METER
- EXISTING ELECTRIC BOX
- EXISTING FIBER OPTIC BOX (FO)
- EXISTING GAS METER
- EXISTING SANITARY SEWER MANHOLE
- EXISTING WATER VALVE
- EXISTING STORM INLET
- EXISTING FIRE HYDRANT
- EXISTING SIGN
- EXISTING BOLLARD
- EXISTING TREE

PROPOSED

- BOUNDARY LINE
- MAJOR CONTOUR (4865)
- MINOR CONTOUR (64)
- SPOT ELEVATIONS (XX.XX):
  XX.XX TBC = TOP BACK OF CURB
  XX.XX FL = FLOWLINE
  XX.XX TOI = TOP OF ISLAND
  XX.XX LP = LOW POINT
  XX.XX HP = HIGH POINT
  XX.XX ME = MATCH EXISTING
  XX.XX = FINISHED GRADE
  XX.XX TRG = TOP OF RAMP
  XX.XX BR = BOTTOM OF RAMP
  XX.XX SW = SIDEWALK
  XX.XX PAN= PAN EDGE
- 3.00% 4.0:1 DRAINAGE SLOPE AND DIRECTION

SOIL PREPARATION & PAVEMENT DESIGN NOTE

SOIL PREPARATION AND PAVEMENT DESIGN SHALL BE PER RECOMMENDATIONS FROM A GEOTECHNICAL REPORT PREPARED FOR THIS SITE AS FOLLOWS: GEOTECHNICAL ENGINEERING EXPLORATION AND ANALYSIS: PROPOSED MURPHY OIL USA FUEL STATION

GEOTECHNICAL ENGINEER: UNITED CONSULTING

PROJECT NO: MPOIL-25-CO-09967-02
DATE: FEBRUARY 27, 2026

THE CONTRACTOR MUST FULLY REVIEW THIS REPORT PRIOR TO CONSTRUCTION. INFORMATION IN THE GEOTECHNICAL REPORT SUPERSEDES ANY CONFLICTING INFORMATION CONTAINED IN THE CONSTRUCTION PLANS AND SPECIFICATIONS. REFER TO GENERAL STRUCTURAL NOTES FOR SPECIFIC SOIL PREPARATION AT SITE STRUCTURES.

SEE SHEET C-4.3 FOR BUILDING ROOF AND CANOPY DRAINAGE

ALL CASTINGS SHALL BE COATED WITH BLACK ASPHALTIC VARNISH.

THESE DRAWINGS DO NOT INCLUDE COMPONENTS FOR CONSTRUCTION SAFETY

CITY OF LONE TREE

DATE

THE CONSTRUCTION PLANS HAVE BEEN REVIEWED BY THE CITY OF LONE TREE FOR SITE IMPROVEMENTS, STORM SEWER, GRADING AND EROSION CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

SHEET NO. C-4.0 Sheet 5 of 29

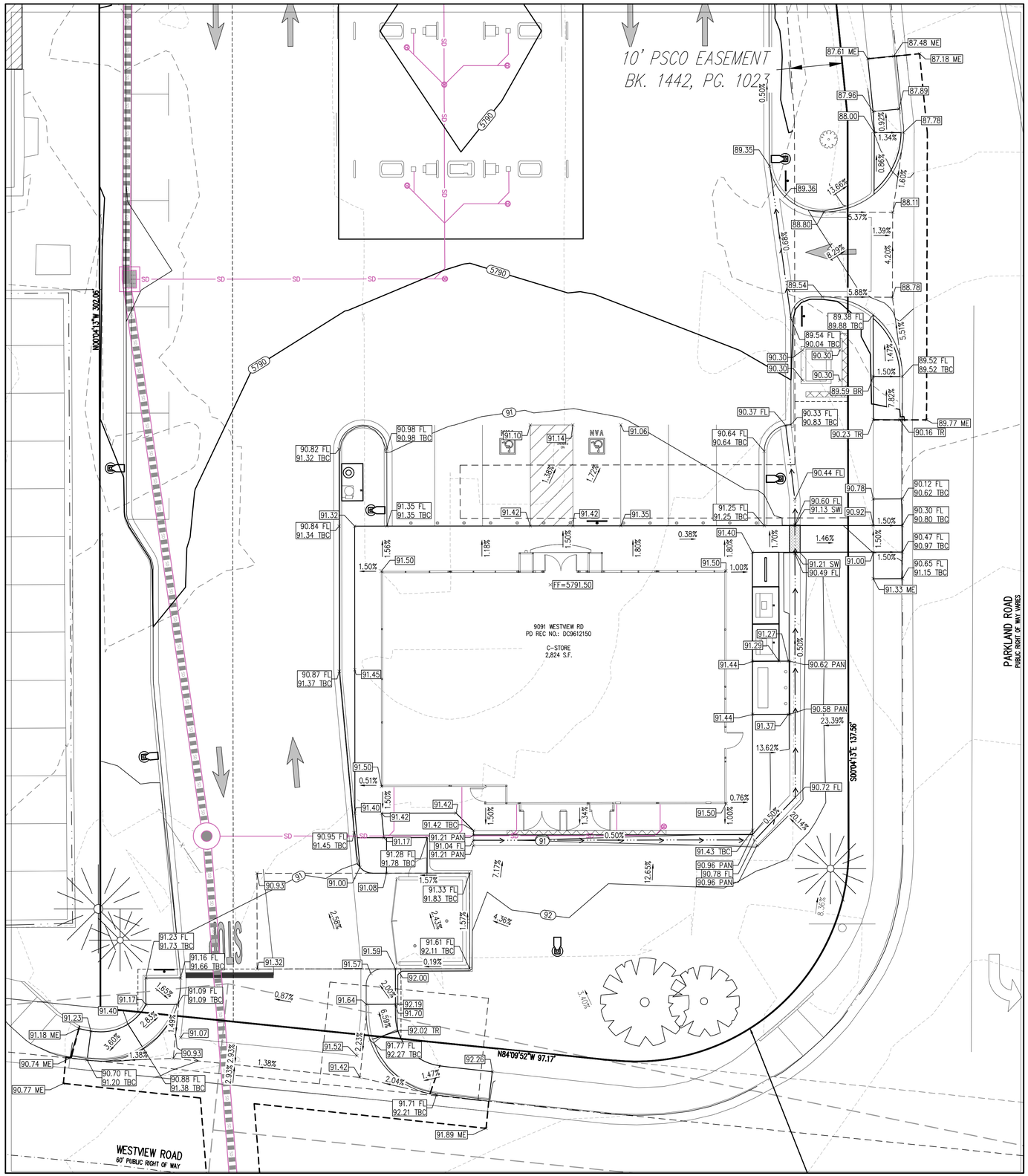
COLORADO LICENSED JOSEPH D. PARK 42470 PROFESSIONAL ENGINEER 11/05/2026

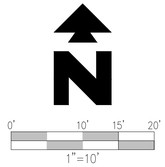
CD 4TH SUBMITTAL	11/05/26	MOC148	JDP	SE	DMH
	DATE	PRN	PM	DES	DRW

GRADING PLAN
MURPHY USA (NTI)
9091 WESTVIEW RD
LONE TREE COLORADO

Galloway
5500 Greenwood Plaza Blvd., Suite 200
Greenwood Village, CO 80111
303.770.8884 • GallowayUS.com

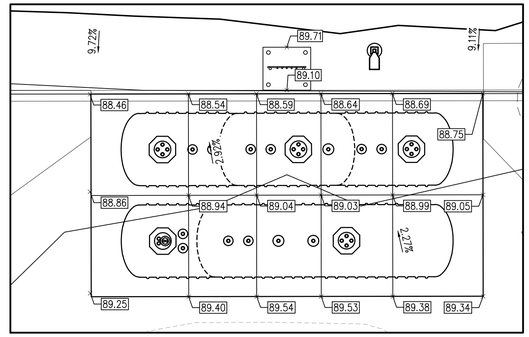
MURPHY OIL USA, INC.
MURPHY USA
200 PEACH STREET
EL DORADO, AR 71730

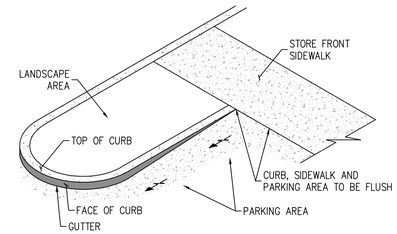




PROPOSED

- BOUNDARY LINE
- 4865 MAJOR CONTOUR
- 64 MINOR CONTOUR
- XX.XX SPOT ELEVATIONS:
  XX.XX TBC = TOP BACK OF CURB
  XX.XX FL = FLOWLINE
  XX.XX TOI = TOP OF ISLAND
  XX.XX LP = LOW POINT
  XX.XX ME = MATCH EXISTING
  XX.XX = FINISHED GRADE
- 3.00% 4.0:1 DRAINAGE SLOPE AND DIRECTION
- SD STORM SEWER (LESS THAN 12"ø)
- PROPOSED STORM SEWER (12"ø AND LARGER)





CURB ISLAND AT STORE FRONT
DESIGN WIND SPEED= 130 M.P.H.

CAUTION – NOTICE TO CONTRACTOR

1. ALL UTILITY LOCATIONS SHOWN ARE BASED ON MAPS PROVIDED BY THE APPROPRIATE UTILITY COMPANY AND FIELD SURFACE EVIDENCE AT THE TIME OF SURVEY AND IS TO BE CONSIDERED AN APPROXIMATE LOCATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF ALL UTILITIES, PUBLIC OR PRIVATE, WHETHER SHOWN ON THE PLANS OR NOT, PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
2. WHERE A PROPOSED UTILITY CROSSES AN EXISTING UTILITY, IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF SUCH EXISTING UTILITY, EITHER THROUGH POTHOLING OR ALTERNATIVE METHOD. REPORT INFORMATION TO THE ENGINEER PRIOR TO CONSTRUCTION.

811 Know what's **below.** **Call** before you dig.

THESE DRAWINGS DO NOT INCLUDE COMPONENTS FOR CONSTRUCTION SAFETY

CITY OF LONE TREE

DATE

THE CONSTRUCTION PLANS HAVE BEEN REVIEWED BY THE CITY OF LONE TREE FOR SITE IMPROVEMENTS, STORM SEWER, GRADING AND EROSION CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

SHEET NO. C-4.1
Sheet 6 of 29

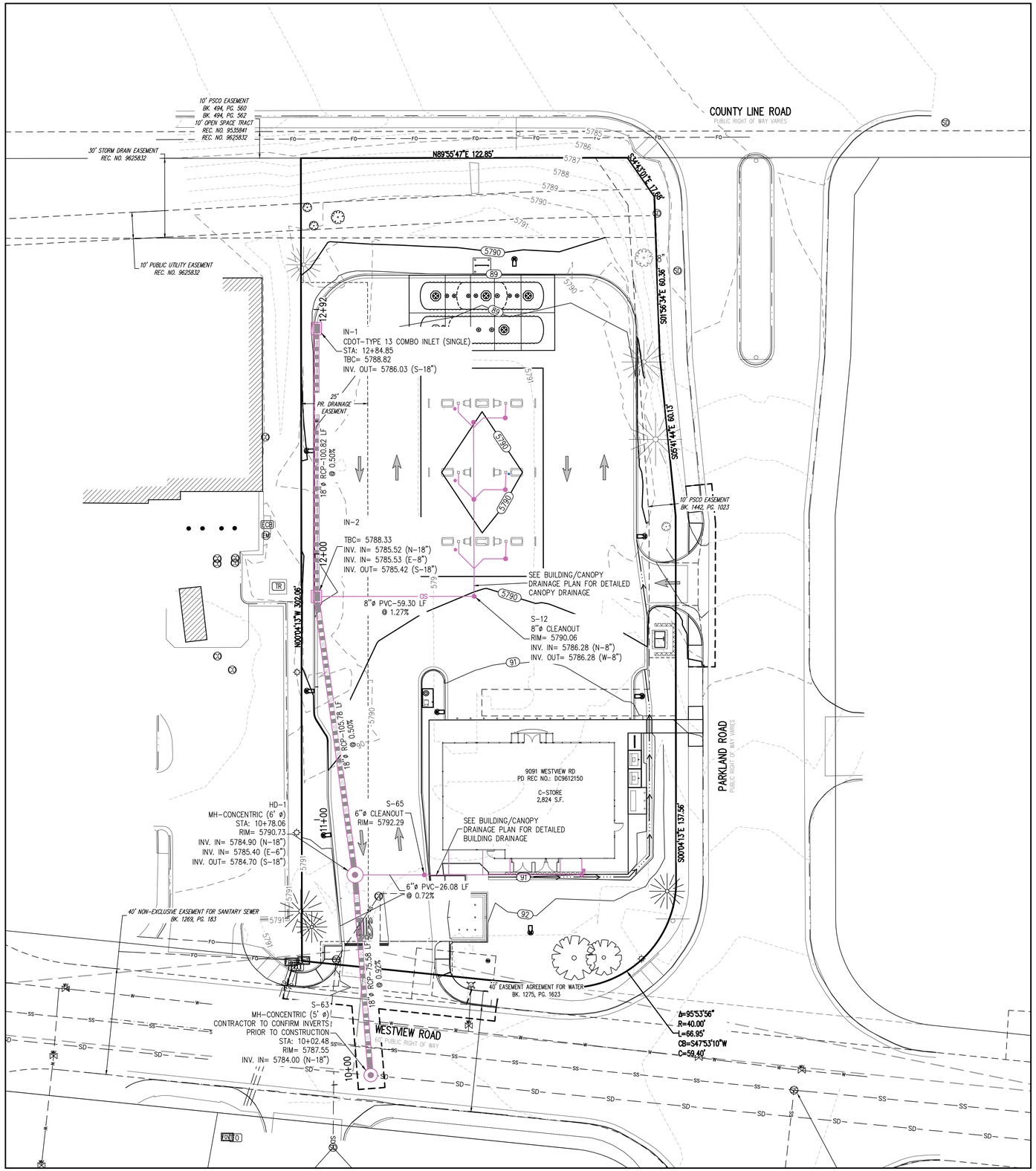
COLORADO LICENSED
JOSEPH D. PAGE
42470
PROFESSIONAL ENGINEER

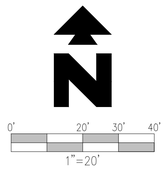
CD 4TH SUBMITTAL	11/05/26 DATE	MOC148 PRN	JDP PM	SE DES	DMH DRW

ENLARGED GRADING PLAN
MURPHY USA (NTI)
9091 WESTVIEW RD
LONE TREE COLORADO

Galloway
5500 Greenwood Plaza Blvd, Suite 200
Greenwood Village, CO 80111
303.770.8884 • GallowayUS.com

MURPHY OIL USA, INC.
200 PEACH STREET
EL DORADO, AR 71730
MURPHY USA



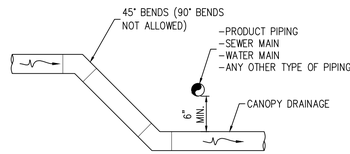


EXISTING

- EXISTING MAJOR CONTOUR (5460)
- EXISTING MINOR CONTOUR (52)
- EXISTING STORM SEWER (LESS THAN 12"ø) (SD)
- EXISTING SANITARY SEWER (SS)
- EXISTING WATER (W)
- EXISTING UNDERGROUND ELECTRIC (UE)
- EXISTING OVERHEAD ELECTRIC (OHE)
- EXISTING FIBER OPTIC (FO)
- EXISTING GAS (G)
- EXISTING STREET LIGHT
- EXISTING TRANSFORMER
- EXISTING ELECTRIC METER
- EXISTING ELECTRIC BOX
- EXISTING FIBER OPTIC BOX
- EXISTING GAS METER
- EXISTING SANITARY SEWER MANHOLE
- EXISTING WATER VALVE
- EXISTING STORM INLET
- EXISTING FIRE HYDRANT
- EXISTING SIGN
- EXISTING BOLLARD
- EXISTING TREE

PROPOSED

- BOUNDARY LINE
- WATER SERVICE (W)
- SANITARY SERVICE (SS)
- ELECTRICAL SERVICE (E)
- PROPOSED STORM SEWER (LESS THAN 12"ø) (SD)
- PROPOSED STORM SEWER (12"ø AND LARGER) (SD)



TYPICAL PIPE CROSSING
DESIGN WIND SPEED= 130 M.P.H.

SEE SHEET C-4.3 FOR BUILDING ROOF AND CANOPY DRAINAGE

CONTRACTOR TO VERIFY ALL ELEVATIONS AND CONFLICTS PRIOR TO INSTALLING BUILDING AND CANOPY DRAINAGE.

THESE DRAWINGS DO NOT INCLUDE COMPONENTS FOR CONSTRUCTION SAFETY

CAUTION – NOTICE TO CONTRACTOR

1. ALL UTILITY LOCATIONS SHOWN ARE BASED ON MAPS PROVIDED BY THE APPROPRIATE UTILITY COMPANY AND FIELD SURFACE EVIDENCE AT THE TIME OF SURVEY AND IS TO BE CONSIDERED AN APPROXIMATE LOCATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF ALL UTILITIES, PUBLIC OR PRIVATE, WHETHER SHOWN ON THE PLANS OR NOT, PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
2. WHERE A PROPOSED UTILITY CROSSES AN EXISTING UTILITY, IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF SUCH EXISTING UTILITY, EITHER THROUGH POTHOLING OR ALTERNATIVE METHOD. REPORT INFORMATION TO THE ENGINEER PRIOR TO CONSTRUCTION.

811 Know what's **below.** **Call** before you dig.

CITY OF LONE TREE

DATE

THE CONSTRUCTION PLANS HAVE BEEN REVIEWED BY THE CITY OF LONE TREE FOR SITE IMPROVEMENTS, STORM SEWER, GRADING AND EROSION CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

SHEET NO. C-4.2 Sheet 7 of 29

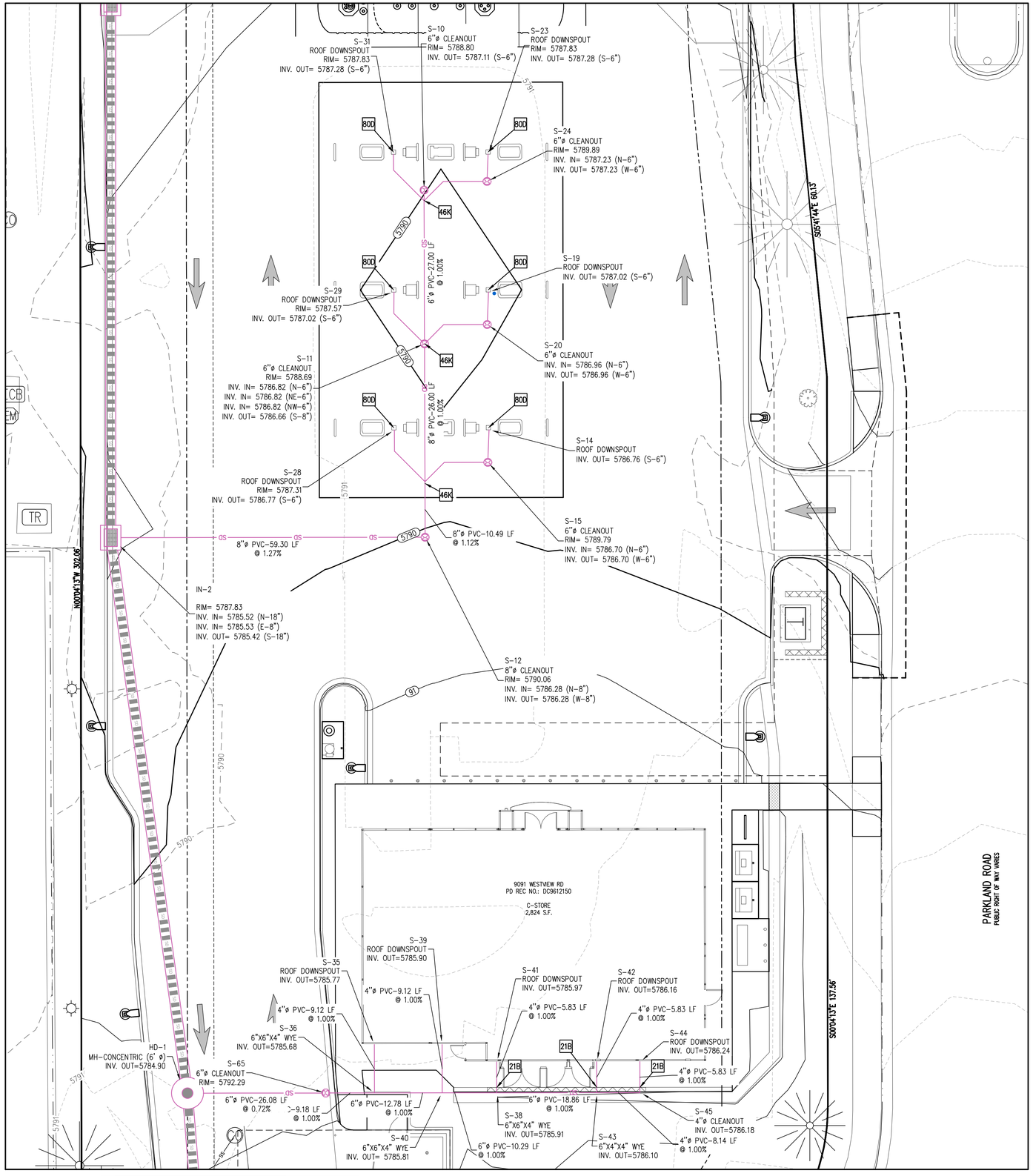
COLORADO LICENSED
JOSEPH D. PACE
42470
PROFESSIONAL ENGINEER

CD 4TH SUBMITTAL	11/05/26	MOC148	JDP	SE	DMH
	DATE	PRN	PM	DES	DRW

OVERALL DRAINAGE PLAN
MURPHY USA (NTI)
9091 WESTVIEW RD
LONE TREE COLORADO

Galloway
5500 Greenwood Plaza Blvd., Suite 200
Greenwood Village, CO 80111
303.770.8884 • GallowayUS.com

MURPHY OIL USA, INC.
200 PEACH STREET
EL DORADO, AR 71730
MURPHY USA



0' 10' 15' 20'
1"=10'

EXISTING

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING STORM SEWER (LESS THAN 12"ø)
- EXISTING SANITARY SEWER
- EXISTING WATER
- EXISTING UNDERGROUND ELECTRIC
- EXISTING OVERHEAD ELECTRIC
- EXISTING FIBER OPTIC
- EXISTING GAS
- EXISTING STREET LIGHT
- EXISTING TRANSFORMER
- EXISTING ELECTRIC METER
- EXISTING ELECTRIC BOX
- EXISTING FIBER OPTIC BOX
- EXISTING GAS METER
- EXISTING SANITARY SEWER MANHOLE
- EXISTING WATER VALVE
- EXISTING STORM INLET
- EXISTING FIRE HYDRANT
- EXISTING SIGN
- EXISTING BOLLARD
- EXISTING TREE

PROPOSED

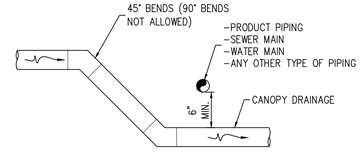
- BOUNDARY LINE
- CANOPY PVC PIPE DRAINAGE
- PROPOSED MAJOR CONTOUR ELEVATIONS
- PROPOSED MINOR CONTOUR ELEVATIONS
- PROPOSED STORM PIPE

GENERAL – CANOPY DRAINAGE NOTES

1. DRAINAGE PIPING AND FITTINGS FOR CANOPY DRAINAGE SHALL BE SOLVENT WELD PVC SCH. 40 (MIN.)
2. REFER TO CLEANOUT DETAIL FOR REQUIRED HEAVY DUTY COVER.
3. DRAINAGE PIPING SHALL BE ROUTED BELOW PRODUCT PIPING (MIN. 6" VERTICAL SEPARATION). COORDINATE WITH TANK/PIPING PLANS.

☐ CANOPY DRAINAGE DETAILS

18C CONNECT TO EXISTING STORM DRAIN INLET – NEATLY CORE OPENING IN WALL OF CATCH BASIN AND SEAL ANNULAR SPACE WITH NON-SHRINK GROUT
46K ROOF DRAIN DOWNSPOUT CONNECTION
80D DOWNSPOUT COLLECTOR
21B CURB OUTFALL



TYPICAL PIPE CROSSING
DESIGN WIND SPEED= 130 M.P.H.

CONTRACTOR TO VERIFY ALL ELEVATIONS AND CONFLICTS PRIOR TO INSTALLING BUILDING AND CANOPY DRAINAGE.

THESE DRAWINGS DO NOT INCLUDE COMPONENTS FOR CONSTRUCTION SAFETY

CITY OF LONE TREE

DATE

THE CONSTRUCTION PLANS HAVE BEEN REVIEWED BY THE CITY OF LONE TREE FOR SITE IMPROVEMENTS, STORM SEWER, GRADING AND EROSION CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

CAUTION – NOTICE TO CONTRACTOR

1. ALL UTILITY LOCATIONS SHOWN ARE BASED ON MAPS PROVIDED BY THE APPROPRIATE UTILITY COMPANY AND FIELD SURFACE EVIDENCE AT THE TIME OF SURVEY AND IS TO BE CONSIDERED AN APPROXIMATE LOCATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF ALL UTILITIES, PUBLIC OR PRIVATE, WHETHER SHOWN ON THE PLANS OR NOT, PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
2. WHERE A PROPOSED UTILITY CROSSES AN EXISTING UTILITY, IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF SUCH EXISTING UTILITY, EITHER THROUGH POTHOLING OR ALTERNATIVE METHOD. REPORT INFORMATION TO THE ENGINEER PRIOR TO CONSTRUCTION.

811 Know what's **below.** **Call** before you dig.

SHEET NO. C-4.3 Sheet 8 of 29

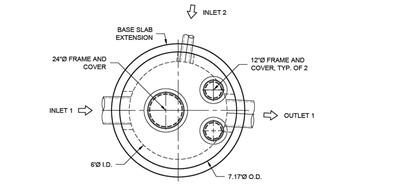
COLORADO LICENSED JOSEPH D. PARK 42470 PROFESSIONAL ENGINEER

DMH	DRW
SE	DES
JDP	PM
MOC148	PRN
11/05/26	DATE
CD 4TH SUBMITTAL	

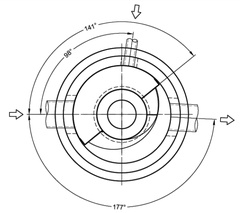
BUILDING & CANOPY DRAINAGE PLAN
MURPHY USA (NTI)
9091 WESTVIEW RD
LONE TREE COLORADO

Galloway
5500 Greenwood Plaza Blvd, Suite 200
Greenwood Village, CO 80111
303.770.8884 • GallowayUS.com

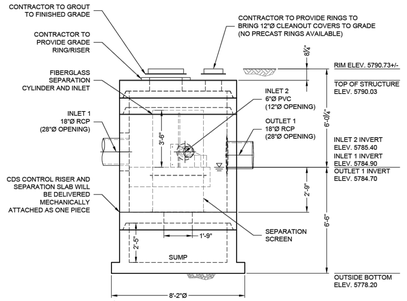
MURPHY OIL USA, INC.
MURPHY USA
200 PEACH STREET
EL DORADO, AR 71730



PLAN VIEW
INTERNALS NOT SHOWN



PLAN VIEW FOR PIPE ORIENTATION
TOP SLAB NOT SHOWN



ELEVATION VIEW

MATERIAL LIST (PROVIDED BY CONTECH)

COUNT	DESCRIPTION	INSTALLED BY
1	3020-6 CONCENTRIC FIBERGLASS INSERT	CONTECH
1	3020, 2400 micron, 3.1' O.D. x 2.25' SCREEN, GREEN FLANGE UP	CONTECH
1	HARDWARE KIT	CONTECH
1	SEALANT FOR JOINTS	CONTRACTOR
1	24"Ø X 4" FRAME AND COVER, EJ #41600389, OR EQUIV.	CONTRACTOR
2	12"Ø X 4" FRAME AND COVER, EJ #41610201, OR EQUIV.	CONTRACTOR

SITE DESIGN DATA

WATER QUALITY FLOW RATE	1.90 CFS
PEAK FLOW RATE	5.4 CFS
RETURN PERIOD OF PEAK FLOW	100 YRS

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. IF REQUIRED, PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.
6. CDS STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

STRUCTURE WEIGHT
APPROXIMATE HEAVIEST PIECE = 15500 LBS.
STRUCTURE IS DELIVERED IN 4 PIECES

MAX FOOTPRINT = 8.17Ø

CONTECH
CONTRACT
DRAWING

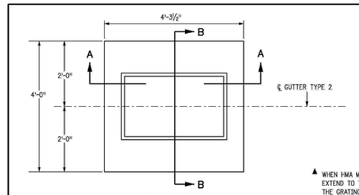
RNK-HNCO
LAYOUT 1H

MARK	DATE	BY	REVISION DESCRIPTION
1	11/20/2008	EDM	REVISED LAYOUT PER EOR

CDS3020-6-C - 907508-010
631670 MURPHY OIL USA
ENGLEWOOD, CO
SITE DESIGNATION: HYDRODYNAMIC SEPARATOR

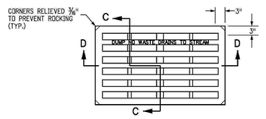
CONTECH ENGINEERED SOLUTIONS LLC
9025 Centre Pointe Drive, Suite 400
West Chester, OH 45069
(800) 338-1122
www.ContechES.com

DATE: 7/29/2026
DESIGNED: STS
DRAWN: EDM
CHECKED: STS
APPROVED: STS
PROJECT No.: 907509
SEQUENCE No.: 010
SHEET: 1 OF 1

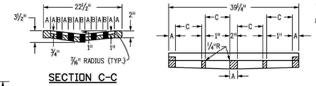


PLAN VIEW
TYPE 13 INLET FOR GUTTER TYPE 2

▲ WHEN HMA MATERIAL IS TO EXTEND TO THE EDGE OF THE GRATING FRAME, CONCRETE MAY BE DEPRESSED.

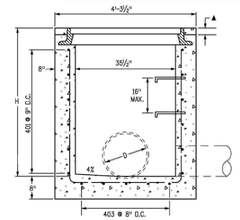


NO. 13 GRATE

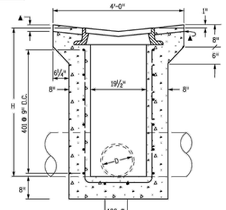


SECTION C-C

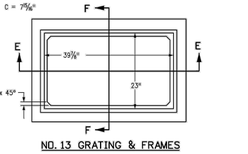
SECTION D-D



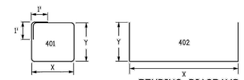
SECTION A-A
D MAX = 30 IN. FOR H > 4 FT.



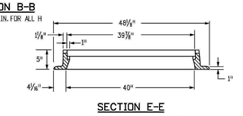
SECTION B-B
D MAX = 18 IN. FOR ALL H



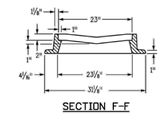
NO. 13 GRATING & FRAMES



BENDING DIAGRAMS
ALL DIMENSIONS ARE OUT-TO-OUT OF BAR.



SECTION E-E
APPROXIMATE WEIGHT = 590 LBS.



SECTION F-F

GENERAL NOTES
1. CONCRETE SHALL BE CLASS B. INLET MAY BE CAST-IN-PLACE OR PRECAST.
2. CAST-IN-PLACE CONCRETE WALLS SHALL BE FORMED ON BOTH SIDES.
3. EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED ¾ OF A INCH.
4. REINFORCING BARS SHALL BE DEFORMED #4 AND SHALL HAVE A 2 INCH MINIMUM CLEARANCE. ALL REINFORCING BARS SHALL BE GRADE 60 AND EPOXY COATED.
5. STEPS SHALL BE PROVIDED WHEN INLET DIMENSION "H" IS EQUAL TO OR GREATER THAN 3 FEET-6 INCHES AND SHALL CONFORM TO AASHTO M 199.
6. ALL GRATES AND FRAMES SHALL BE GRAY OR DUCTILE CAST IRON IN ACCORDANCE WITH SUBSECTION 712.06. GRATES AND FRAMES SHALL BE DESIGNED TO WITHSTAND HS 20 LOADING.
7. STATION POINT IS AT THE CENTER OF THE INLET.
8. GRATE SHALL HAVE "DUMP NO WASTE DRAINS TO STREAM" MESSAGE CAST ON SURFACE.

H	CONCRETE	REINFORCING STEEL	NO. OF 401 BARS REQ'D.	MAXIMUM PIPE I.D.	
	CU. YDS.	LB.		SEC. A-A IN.	SEC. B-B IN.
3'-0"	1.3	72	4	18	18
3'-6"	1.5	76	4	24	18
4'-0"	1.6	90	5	30	18
4'-6"	1.8	104	6	30	18
5'-0"	1.9	109	6	30	18
5'-6"	2.1	122	7	30	18
6'-0"	2.2	136	8	30	18
6'-6"	2.4	141	8	30	18
7'-0"	2.5	154	9	30	18
7'-6"	2.7	168	10	30	18
8'-0"	2.8	173	10	30	18
8'-6"	3.0	187	11	30	18
9'-0"	3.1	200	12	30	18
9'-6"	3.3	205	12	30	18
10'-0"	3.4	219	13	30	18

θ INCLUDES 1% FOR OVERRUN.
NOTE: CONCRETE QUANTITIES INCLUDE VOLUME OCCUPIED BY PIPE.

QUANTITIES FOR ONE INLET

MARK	NO. REQ'D.	DIMENSIONS X	Y	LENGTH
401	4	3'-0"	2'-2"	13'-4"
402	2	3'-4½"	* 2'-4½"	8'-5½"
403	5	2'-5½"	* 2'-7"	7'-5½"

* ADD 6 IN. TO THIS DIMENSION FOR EACH 6 IN. INCREASE OF H OVER 3 FT.-0 IN.

BAR LIST FOR H = 3 FT.-0 IN.

Computer File Information		Sheet Revisions	
Creation Date: 07/31/19		Date:	Comments
Designer Initials: JBK			
Last Modification Date: 07/31/19			
Detailer Initials: LTA			
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English			

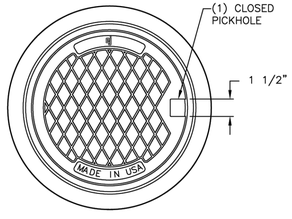
Colorado Department of Transportation
2829 West Howard Place
CDOT HQ, 3rd Floor
Denver, CO 80204
Phones 303-757-9021 FAX: 303-757-9868
Project Development Branch JBK

CONCRETE INLET TYPE 13

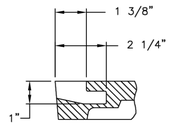
Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.
M-604-13
Standard Sheet No. 1 of 1
Project Sheet Number:

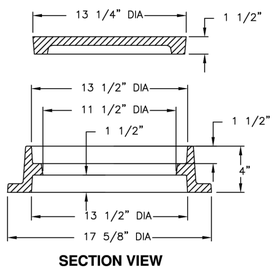
V1610-2BF RG V1610-2CV Assembly



BOTTOM FLANGE VIEW



PICKHOLE DETAIL



SECTION VIEW

NOTE:
RING IS REVERSIBLE AND CAN BE INSTALLED AS A TOP FLANGE UNIT

Product Number
41610201
Design Features
-Materials
Cleanout/Monument Box Frame
Gray Iron (CL35B)
Cleanout/Monument Box Cover
Gray Iron (CL35B)

-Design Load
Heavy Duty
-Open Area
n/a
-Coating
Undipped
- √ Designates Machined Surface

Certification
- ASTM A48
-
-
-Country of Origin: USA

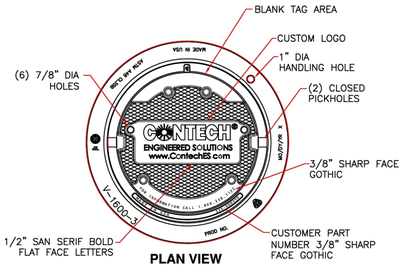
Major Components
41610210
41610220

Drawing Revision
06/12/2003 Designer: DAL
09/09/2015 Revised By: DVD

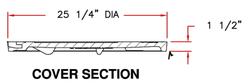
Disclaimer
Weights (lbs./kg) dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.
CONFIDENTIAL: This drawing is the property of EJ GROUP, Inc., and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ GROUP, Inc. Copyright © 2012 EJ GROUP, Inc. All rights reserved.

Contact
800 626 4653
ejco.com

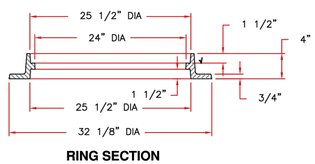
V1600-3 V1610-3 Assembly



PLAN VIEW



COVER SECTION



RING SECTION

Product Number
41600389
Design Features
-Materials
Frame
Gray Iron (CL35B)
Cover
Gray Iron (CL35B)

-Design Load
Heavy Duty
-Open Area
n/a
-Coating
Undipped
- √ Designates Machined Surface

Certification
-
- ASTM A48
-
-Country of Origin: USA

Major Components
41600310
41600374

Drawing Revision
05/02/2008 Designer: DEW
6/20/2017 Revised By: DAE

Disclaimer
Weights (lbs./kg) dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.
CONFIDENTIAL: This drawing is the property of EJ GROUP, Inc., and embodies confidential information, registered marks, patents, trade secret information, and/or know how that is the property of EJ GROUP, Inc. Copyright © 2012 EJ GROUP, Inc. All rights reserved.

Contact
800 626 4653
ejco.com

CITY OF LONE TREE

DATE

THE CONSTRUCTION PLANS HAVE BEEN REVIEWED BY THE CITY OF LONE TREE FOR SITE IMPROVEMENTS, STORM SEWER, GRADING AND EROSION CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

SHEET NO. C-4.3
Sheet 9 of 29

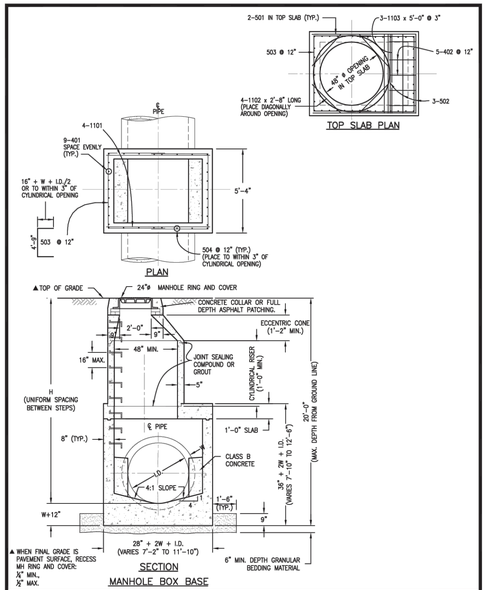
COLORADO LICENSED
JOSEPH D. PAGE
42470
PROFESSIONAL ENGINEER

CD 4TH SUBMITTAL	11/05/26	MOC148	JDP	SE	DMH
	DATE	PRN	PM	DES	DRW

STORM DETAILS
MURPHY USA (NTI)
9091 WESTVIEW RD
LONE TREE COLORADO

Galloway
5500 Greenwood Plaza Blvd, Suite 200
Greenwood Village, CO 80111
303.770.8884 • GallowayUS.com

MURPHY OIL USA, INC.
MURPHY USA
200 PEACH STREET
EL DORADO, AR 71730



REFERENCE: CDOT M & S STANDARDS M-604-20

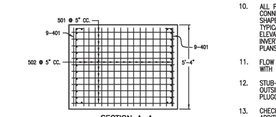
MANHOLES

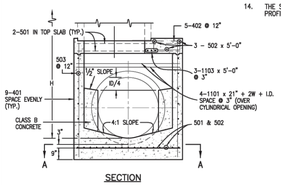
DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised:
Drawing No. **SP.43a**

GENERAL NOTES

1. SINCE ALL PIPE ENTRIES INTO THE BASE ARE VARIABLE, THE DIMENSIONS SHOWN ARE TYPICAL. ACTUAL DIMENSIONS AND QUANTITIES FOR CONCRETE AND REINFORCEMENT SHALL BE AS REQUIRED IN THE WORK.
2. THE PRECAST FLAT TOP MAY BE USED ON ANY MANHOLE. THE ECCENTRIC CONE MAY BE USED WHEN THE MANHOLE "H" HEIGHT IS AT LEAST 8'.
3. THE MH RING (FRAME) SHALL BE SET ON CONCRETE GRADE RINGS. THE FRAME SHALL BE SURROUNDED WITH A CONCRETE COLLAR IN UNPAVED AREA AND CONCRETE PAVEMENT, OR FULL DEPTH ASPHALT IN ASPHALT PAVEMENT. SEE DETAILS ON SHEETS 2 AND 3.
4. DESIGN OF BOX BASE IS BASED ON STRAIGHT RUNS OF CONDUIT OR CHANGE IN DIRECTION OF LESS THAN 45°. SPECIAL DESIGN IS REQUIRED FOR 45° OR GREATER.
5. PRECAST MANHOLES AND REINFORCEMENT SHALL CONFORM TO ASTM C 478 (AASHTO M 199).
6. CAST-IN-PLACE MANHOLES SHALL BE CLASS D CONCRETE.
7. STEPS SHALL BE REQUIRED WHEN THE MANHOLE DEPTH EXCEEDS 3'-6" AND SHALL BE IN ACCORDANCE WITH AASHTO M 199.
8. ALL REINFORCING STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 60,000 PSI. VERTICAL STEEL SHALL BE PLACED AT L OF WALL. ALL BARS SHALL HAVE A 2" MINIMUM CLEARANCE. ALL REINFORCING BARS SHALL BE EPOXY COATED.
9. IF ANY REBAR HAS TO BE CUT ON THE JOB SITE, THE EXPOSED BARE STEEL SHALL BE IMMEDIATELY COVERED WITH A MANUFACTURE APPROVED EPOXY PAINT PRIOR TO POUR.
10. ALL PIPE ENTRIES INTO THE BASE OF MANHOLE SHALL BE CONCRETE BY OPEN CHANNELIZATION ADJUSTED FOR PIPE SIZE, SHAPE, SLOPE, AND DIRECTION OF FLOW. DETAILS SHOWN ARE TYPICAL FOR INSTALLATIONS WITH ALL INVERTS OF SAME RELATIVE ELEVATION. FOR EXCESSIVE ELEVATION DIFFERENCE BETWEEN INVERTS, SPECIAL BASE/CHANNEL DETAILS WILL BE SHOWN ON THE PLANS.
11. FLOW CHANNELS AND INVERTS SHALL BE FORMED BY SHAPING WITH CLASS B CONCRETE.
12. STUB-OUTS SHALL EXTEND A MINIMUM OF 1 PIPE SECTION BEYOND OUTSIDE WALL SURFACE OF MANHOLE AND BE SATISFACTORILY PLUGGED.
13. CHECK WITH THE LOCAL GOVERNMENT AUTHORITY FOR ANY ADDITIONAL SANITARY SEWER SPECIFICATIONS, DETAILS, OR REGULATIONS.
14. THE SLOPE OF THE MANHOLE COVER SHALL MATCH THE ROADWAY PROFILE AND CROSS SLOPE.



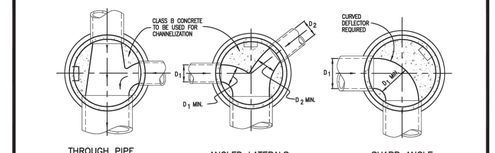


REFERENCE: CDOT M & S STANDARDS M-604-20

MANHOLES

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised:
Drawing No. **SP.43b**



TYPICAL CHANNELIZATION DETAILS

QUANTITIES FOR CONCRETE MANHOLE BOX BASE

MARK	SIZE	TYPE	WT. ℄/FT.	BARS	I.D. 60"	I.D. 66"	I.D. 72"	I.D. 84"	I.D. 96"	FORMULAS
401	4	I	0.668	NO. REQ'D.	18	18	18	18	18	401
				LENGTH	8'-8"	9'-3"	9'-10"	11'-0"	12'-2"	BAR LENGTH = 32"+2W+I.D.
				WEIGHT ℄	104.2	111.2	118.2	132.3	146.3	
402	4	III	0.668	NO. REQ'D.	5	5	5	5	5	402
				LENGTH	6'-0"	6'-7"	7'-2"	8'-4"	9'-8"	BAR LENGTH = I.D. + 2W
				WEIGHT ℄	20.0	22.0	23.9	27.8	31.7	
501	5	I	1.043	NO. REQ'D.	17	17	17	17	17	501
				LENGTH	8'-0"	8'-7"	9'-2"	10'-4"	11'-6"	BAR LENGTH = 24" + I.D. + 2W
				WEIGHT ℄	141.8	152.2	162.5	183.2	203.9	
502	5	I	1.043	NO. REQ'D.	23	25	26	29	32	502
				LENGTH	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	NUMBER BARS REQ'D. = $3+\left(\frac{24+I.D.+2W}{6}+1\right)$
				WEIGHT ℄	119.9	130.4	135.6	151.2	166.9	
503	5	II	1.043	NO. REQ'D.	16	18	18	20	24	503
				LENGTH	13'-5"	14'-0"	14'-7"	15'-9"	16'-11"	NUMBER BARS REQ'D. = $2\left(\frac{13+I.D.+2W}{12}+1\right)$
				WEIGHT ℄	223.9	262.8	273.8	328.5	423.5	BAR LENGTH = 4'-9"+2(16+W+I.D./2)
504	5	I	1.043	NO. REQ'D.	14	14	16	18	18	504
				LENGTH	8'-8"	9'-3"	9'-10"	11'-0"	12'-2"	NUMBER BARS REQ'D. = $2\left(\frac{24+I.D.+2W}{12}+1\right)$
				WEIGHT ℄	126.6	135.1	164.1	206.5	253.8	BAR LENGTH = 32"+2W+I.D.
1101	11	I	5.313	NO. REQ'D.	4	4	4	4	4	1101
				LENGTH	7'-8"	8'-4"	9'-1"	10'-1"	11'-3"	BAR LENGTH = 21" + I.D. + 2W
				WEIGHT ℄	164.7	177.1	189.5	214.3	239.1	
1102	11	I	5.313	NO. REQ'D.	4	4	4	4	4	BENDING
				LENGTH	2'-8"	2'-8"	2'-8"	2'-8"	56.7	TYPE I: STRAIGHT
				WEIGHT ℄	56.7	56.7	56.7	56.7	2'-8"	TYPE II: 16"+W+I.D./2
1103	11	I	5.313	NO. REQ'D.	3	3	3	3	3	TYPE III: I.D.+2W-38"
				LENGTH	5'-0"	5'-0"	5'-0"	5'-0"	5'-0"	
				WEIGHT ℄	79.7	79.7	79.7	79.7	79.7	
REINFORCING STEEL, TOTAL ℄					1,037.5	1,172.2	1,204.9	1,360.2	1,601.6	
CONCRETE – CUBIC YARDS – TOTAL					6.6	7.3	8.0	9.5	11.1	

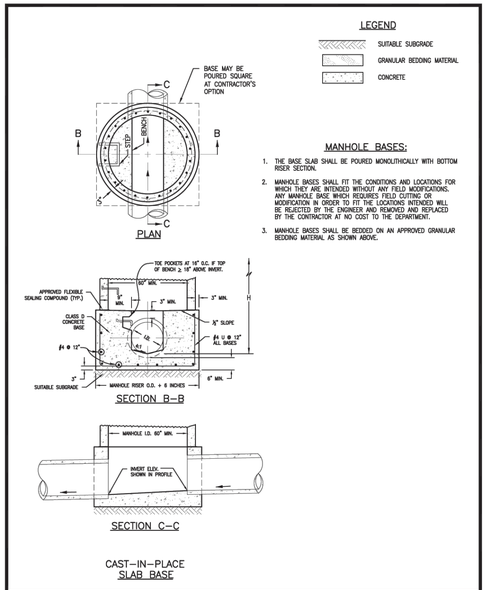
NOTE: QUANTITIES ARE BASED ON SAME SIZE PIPE ENTRANCE TO AND EXIT FROM, BASE AND A 4 FT. MANHOLE ENTRANCE INTO TOP SLAB OF BASE.

REFERENCE: CDOT M & S STANDARDS M-604-20

MANHOLES

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised:
Drawing No. **SP.43c**

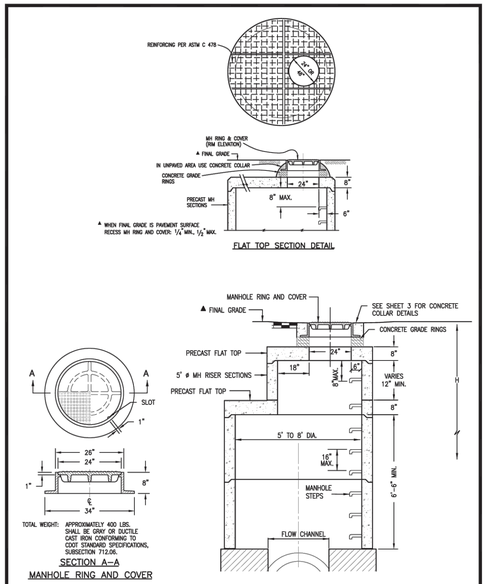


REFERENCE: CDOT M & S STANDARDS M-604-20

MANHOLES

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised:
Drawing No. **SP.43d**



REFERENCE: CDOT M & S STANDARDS M-604-20

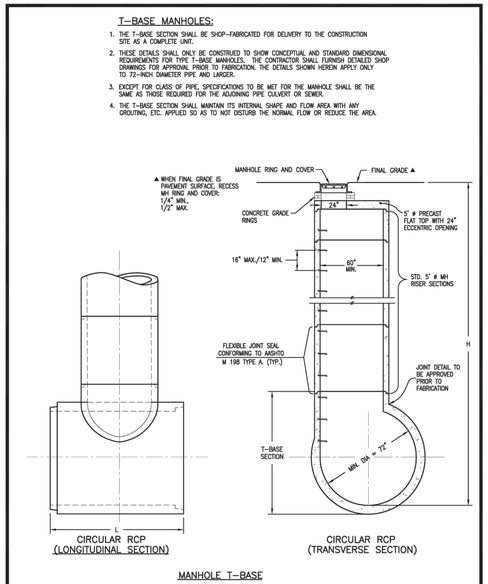
MANHOLES

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised:
Drawing No. **SP.43e**

T-BASE MANHOLES:

1. THE T-BASE SECTION SHALL BE SHOP-FABRICATED FOR DELIVERY TO THE CONSTRUCTION SITE AS A COMPLETE UNIT.
2. THESE DETAILS SHALL ONLY BE CONSTRUED TO SHOW CONCEPTUAL AND STANDARD DIMENSIONAL REQUIREMENTS FOR TYPE T-BASE MANHOLES. THE CONTRACTOR SHALL FURNISH DETAILED SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION. THE DETAILS SHOWN HEREIN APPLY ONLY TO 72-INCH DIAMETER PIPE AND LARGER.
3. EXCEPT FOR CLASS OF PIPE, SPECIFICATIONS TO BE MET FOR THE MANHOLE SHALL BE THE SAME AS THOSE REQUIRED FOR THE ADJOINING PIPE CULVERT OR SEWER.
4. THE T-BASE SECTION SHALL MAINTAIN ITS INTERNAL SHAPE AND FLOW AREA WITH ANY GROUTING, ETC. APPLIED SO AS TO NOT DISTURB THE NORMAL FLOW OR REDUCE THE AREA.



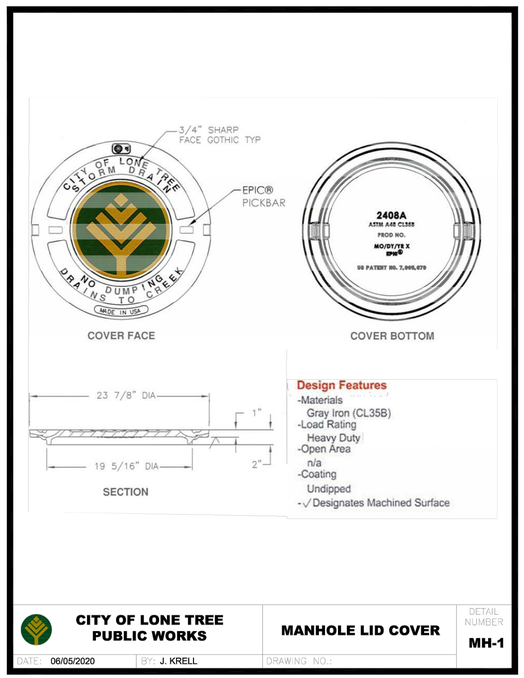
MANHOLE T-BASE

REFERENCE: CDOT M & S STANDARDS M-604-20

MANHOLES

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised:
Drawing No. **SP.43f**



CITY OF LONE TREE PUBLIC WORKS	MANHOLE LID COVER	DETAIL NUMBER
DATE: 06/05/2020	BY: J. KRELL	DRAWING NO.:	MH-1

CITY OF LONE TREE

DATE

THE CONSTRUCTION PLANS HAVE BEEN REVIEWED BY THE CITY OF LONE TREE FOR SITE IMPROVEMENTS, STORM SEWER, GRADING AND EROSION CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

SHEET NO. C-4.5
Sheet 10 of 29

COLORADO LICENSED JOSEPH D. PACE 42470 PROFESSIONAL ENGINEER

CD	4TH SUBMITTAL	11/05/26	MOC148	JDP	SE	DMH
		DATE	PRN	PM	DES	DRW

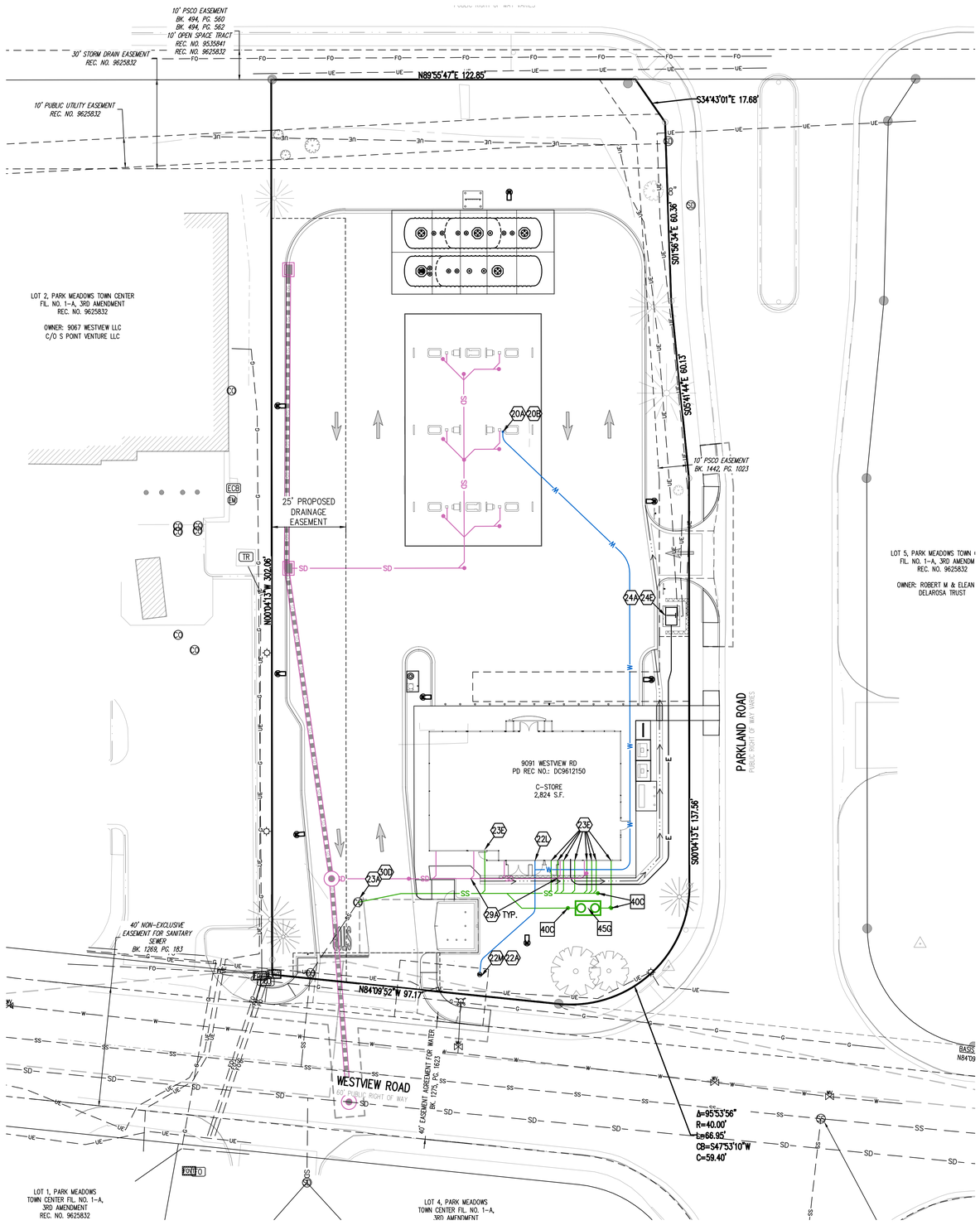
MANHOLE DETAILS
MURPHY USA (NTI)
9091 WESTVIEW RD
LONE TREE COLORADO

Galloway

5500 Greenwood Plaza Blvd., Suite 200
Greenwood Village, CO 80111
303.770.8884 • GallowayUS.com

MURPHY USA

MURPHY OIL USA, INC.
200 PEACH STREET
EL DORADO, AR 71730



GENERAL UTILITY NOTES

1. ALL BUILDING WATER LINES FROM METER TOWARDS BUILDING SHALL BE SCHEDULE 40 PVC MEETING ASTM D1785 & D2665 SPECIFICATIONS AND SHALL BE RATED FOR USE WITH POTABLE WATER PER NSF ST. 61 WITH 36" MIN. COVER.
2. ALL SANITARY SEWER LINES SHALL BE SCHEDULE 40 PVC UNLESS OTHERWISE SPECIFIED BY THE UTILITY COMPANY, PROVIDE 36" MINIMUM COVER.
3. CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY SERVICES WITH ADJACENT PROPERTY OWNERS.
4. ALL ELECTRIC AND TELEPHONE EXTENSIONS INCLUDING SERVICE LINES SHALL BE CONSTRUCTED TO THE APPROPRIATE UTILITY COMPANY SPECIFICATIONS. ALL UTILITY DISCONNECTIONS SHALL BE COORDINATE WITH THE DESIGNATED UTILITY COMPANIES.
5. CONSTRUCTION SHALL NOT START ON ANY PUBLIC UTILITY SYSTEM UNTIL WRITTEN APPROVAL HAS BEEN RECEIVED BY THE ENGINEER FROM THE APPROPRIATE GOVERNING AUTHORITY AND CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER.
6. PRIOR TO THE CONSTRUCTION OF OR CONNECTION TO ANY STORM DRAIN, SANITARY SEWER, WATER MAIN OR ANY OTHER UTILITIES, THE CONTRACTOR SHALL EXCAVATE, VERIFY AND CALCULATE ALL POINTS OF CONNECTION AND ALL UTILITY CROSSINGS AND INFORM CONSULTING ENGINEER(S) AND THE OWNER/DEVELOPER OF ANY CONFLICT OR REQUIRED DEVIATIONS FROM THE PLAN. NOTIFICATION SHALL BE MADE A MINIMUM OF (72) HOURS PRIOR TO CONSTRUCTION. CONSULTANT AND ITS CLIENTS SHALL BE HELD HARMLESS IN THE EVENT THAT THE CONTRACTOR FAILS TO MAKE SUCH NOTIFICATION.
7. CONTRACTOR SHALL COMPLY COMPLETELY WITH THE LATEST STANDARDS OF OSHA DIRECTIVES OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING AND OTHER MEANS OF PROTECTION. THIS IS TO INCLUDE, BUT NOT LIMITED FOR ACCESS AND EGRESS FROM ALL EXCAVATION AND TRENCHING. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH PERFORMANCE CRITERIA AS REQUIRED BY OSHA.
8. FREEZLESS WATER BIBB TO BE LOCATED ON BUILDING SIDE OF CANOPY COLUMN.
9. WATERLINE SERVICE TO DISPENSER ISLAND TO BE ¾" SCH. 40 PVC.

UTILITY INSTALLATION RESPONSIBILITIES

WATER SERVICE:
* UTILIZING EXISTING METER AND SERVICE CONNECTION, NO FEES ARE ANTICIPATED.
1. PLAN TO USE EXISTING WATER METER.
2. CONTRACTOR TO PROVIDE AND INSTALL WATER LINES AND APPURTENANCES FROM METER TO BUILDING.

ELECTRIC SERVICE:
1. PLAN TO USE EXISTING TRANSFORMER.
2. CONTRACTOR TO PROVIDE AND INSTALL 2-4" CONDUITS FROM TRANSFORMER TO BUILDING INCLUDING SWEEPS (36" R.), AND SECONDARY WIRE.

SEWER SERVICE:
1. CONTRACTOR TO CONNECT TO EXISTING STUB OUT, PROVIDE AND INSTALL SERVICE LINES AND CLEANOUTS FROM POINT OF CONNECTION TO BUILDING.

INTERNET SERVICE:
1. CONTRACTOR TO INSTALL 2-2" CONDUITS WITH PULL STRING FROM BUILDING TO CONNECTION POINT.

SEE COVER SHEET FOR UTILITY CONTACTS.

NOTE

CONTRACTOR TO SCHEDULE FINAL GREASE INTERCEPTOR INSPECTION WITH SOUTHGATE SANITATION DISTRICT (MINIMUM 2-DAYS NOTICE)

SOUTHGATE SANITATION DISTRICT:
303-779-0261

CAUTION – NOTICE TO CONTRACTOR

1. ALL UTILITY LOCATIONS SHOWN ARE BASED ON MAPS PROVIDED BY THE APPROPRIATE UTILITY COMPANY AND FIELD SURFACE EVIDENCE AT THE TIME OF SURVEY AND IS TO BE CONSIDERED AN APPROXIMATE LOCATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF ALL UTILITIES, PUBLIC OR PRIVATE, WHETHER SHOWN ON THE PLANS OR NOT, PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
2. WHERE A PROPOSED UTILITY CROSSES AN EXISTING UTILITY, IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF SUCH EXISTING UTILITY, EITHER THROUGH POTHOLING OR ALTERNATIVE METHOD. REPORT INFORMATION TO THE ENGINEER PRIOR TO CONSTRUCTION.

811 Know what's **below.** **Call** before you dig.

EXISTING

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- SD — EXISTING STORM SEWER (LESS THAN 12"ø)
- SS — EXISTING SANITARY SEWER
- W — EXISTING WATER
- UE — EXISTING UNDERGROUND ELECTRIC
- OHE — EXISTING OVERHEAD ELECTRIC
- FO — EXISTING FIBER OPTIC
- G — EXISTING GAS
- EXISTING STREET LIGHT
- EXISTING TRANSFORMER
- EXISTING ELECTRIC METER
- EXISTING ELECTRIC BOX
- EXISTING FIBER OPTIC BOX
- EXISTING GAS METER
- EXISTING SANITARY SEWER MANHOLE
- EXISTING WATER VALVE
- EXISTING STORM INLET
- EXISTING FIRE HYDRANT
- EXISTING SIGN
- EXISTING BOLLARD
- EXISTING TREE

PROPOSED

- BOUNDARY LINE
- W — WATER SERVICE
- SS — SANITARY SERVICE
- E — ELECTRICAL SERVICE
- SD — PROPOSED STORM SEWER (LESS THAN 12"ø)
- PROPOSED STORM SEWER (12"ø AND LARGER)

UTILITY NOTES

20A	FREEZE-LESS YARD HYDRANT AT PUMP ISLAND (¾" SCH. 40 PVC)
20B	POINT OF CONNECTION – CANOPY WATER SERVICE
22A	POINT OF CONNECTION – WATER SERVICE
22L	METERED DOMESTIC WATER SERVICE ENTRY PER ARCH. PLANS (SEE SIZES THIS SHEET)
22M	EXISTING WATER METER
23A	POINT OF CONNECTION – EXISTING SANITARY SEWER
23E	SANITARY SEWER SERVICE ENTRY (PER ARCH. PLANS)
24A	POINT OF CONNECTION FOR UNDERGROUND ELECTRIC SERVICE
24E	TRANSFORMER
29A	MAINTAIN MIN. 18" VERTICAL SEPARATION
30D	VERIFY LOCATION AND DEPTH OF EXISTING UTILITY BEFORE CONSTRUCTING PROPOSED UTILITY

UTILITY DETAILS

40C	SANITARY SEWER CLEAN OUT
45G	750 GALLON GREASE INTERCEPTOR

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

THESE DRAWINGS DO NOT INCLUDE COMPONENTS FOR CONSTRUCTION SAFETY

CITY OF LONE TREE

DATE

THE CONSTRUCTION PLANS HAVE BEEN REVIEWED BY THE CITY OF LONE TREE FOR SITE IMPROVEMENTS, STORM SEWER, GRADING AND EROSION CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

SHEET NO. C-6.0 Sheet 11 of 29

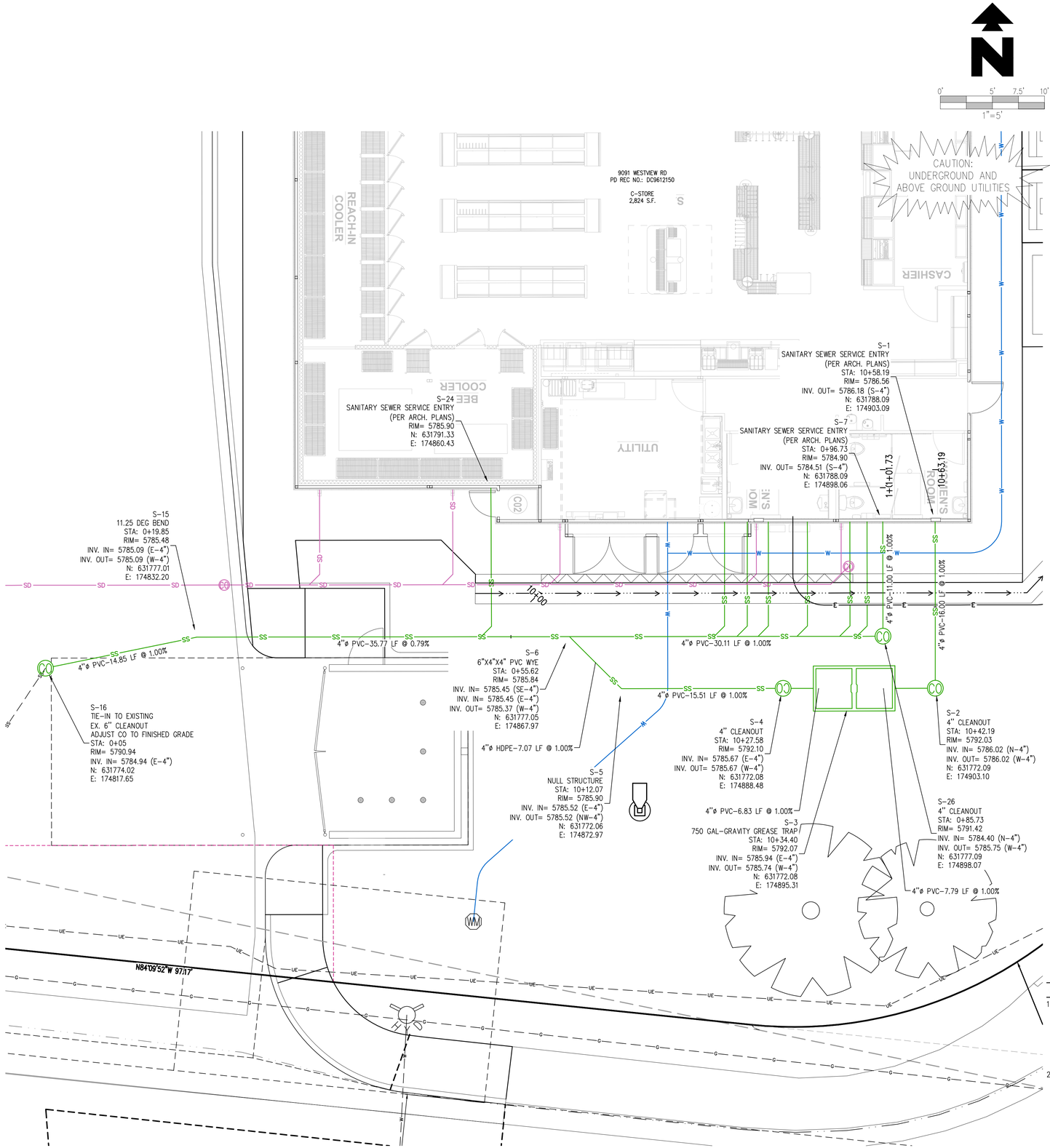
COLORADO LICENSED
JOSEPH D. PARK
42470
PROFESSIONAL ENGINEER

CD SUBMITTAL	11/05/26 DATE	MOC148 PRN	JDP PM	SE DES	DMH DRW

UTILITY PLAN
MURPHY USA (NTI)
9091 WESTVIEW RD
LONE TREE COLORADO

Galloway
5500 Greenwood Plaza Blvd., Suite 200
Greenwood Village, CO 80111
303.770.8884 • GallowayUS.com

MURPHY OIL USA, INC.
MURPHY USA
200 PEACH STREET
EL DORADO, AR 71730



GENERAL UTILITY NOTES

1. ALL BUILDING WATER LINES FROM METER TOWARDS BUILDING SHALL BE SCHEDULE 40 PVC MEETING ASTM D1785 & D2665 SPECIFICATIONS AND SHALL BE RATED FOR USE WITH POTABLE WATER PER NSF ST. 61 WITH 36" MIN. COVER.
2. ALL SANITARY SEWER LINES SHALL BE SCHEDULE 40 PVC UNLESS OTHERWISE SPECIFIED BY THE UTILITY COMPANY, PROVIDE 36" MINIMUM COVER.
3. CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY SERVICES WITH ADJACENT PROPERTY OWNERS.
4. ALL ELECTRIC AND TELEPHONE EXTENSIONS INCLUDING SERVICE LINES SHALL BE CONSTRUCTED TO THE APPROPRIATE UTILITY COMPANY SPECIFICATIONS. ALL UTILITY DISCONNECTIONS SHALL BE COORDINATE WITH THE DESIGNATED UTILITY COMPANIES.
5. CONSTRUCTION SHALL NOT START ON ANY PUBLIC UTILITY SYSTEM UNTIL WRITTEN APPROVAL HAS BEEN RECEIVED BY THE ENGINEER FROM THE APPROPRIATE GOVERNING AUTHORITY AND CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER.
6. PRIOR TO THE CONSTRUCTION OF OR CONNECTION TO ANY STORM DRAIN, SANITARY SEWER, WATER MAIN OR ANY OTHER UTILITIES, THE CONTRACTOR SHALL EXCAVATE, VERIFY AND CALCULATE ALL POINTS OF CONNECTION AND ALL UTILITY CROSSINGS AND INFORM CONSULTING ENGINEER(S) AND THE OWNER/DEVELOPER OF ANY CONFLICT OR REQUIRED DEVIATIONS FROM THE PLAN. NOTIFICATION SHALL BE MADE A MINIMUM OF (72) HOURS PRIOR TO CONSTRUCTION. CONSULTANT AND ITS CLIENTS SHALL BE HELD HARMLESS IN THE EVENT THAT THE CONTRACTOR FAILS TO MAKE SUCH NOTIFICATION.
7. CONTRACTOR SHALL COMPLY COMPLETELY WITH THE LATEST STANDARDS OF OSHA DIRECTIVES OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING AND OTHER MEANS OF PROTECTION. THIS IS TO INCLUDE, BUT NOT LIMITED FOR ACCESS AND EGRESS FROM ALL EXCAVATION AND TRENCHING. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH PERFORMANCE CRITERIA AS REQUIRED BY OSHA.
8. FREEZLESS WATER BIBB TO BE LOCATED ON BUILDING SIDE OF CANOPY COLUMN.
9. WATERLINE SERVICE TO DISPENSER ISLAND TO BE ¾" SCH. 40 PVC.

UTILITY INSTALLATION RESPONSIBILITIES

WATER SERVICE:
* UTILIZING EXISTING METER AND SERVICE CONNECTION, NO FEES ARE ANTICIPATED.
1. PLAN TO USE EXISTING WATER METER.
2. CONTRACTOR TO PROVIDE AND INSTALL WATER LINES AND APPURTENANCES FROM METER TO BUILDING.

ELECTRIC SERVICE:
1. PLAN TO USE EXISTING TRANSFORMER.
2. CONTRACTOR TO PROVIDE AND INSTALL 2-4" CONDUITS FROM TRANSFORMER TO BUILDING INCLUDING SWEEPS (36" R.), AND SECONDARY WIRE.

SEWER SERVICE:
1. CONTRACTOR TO CONNECT TO EXISTING STUB OUT, PROVIDE AND INSTALL SERVICE LINES AND CLEANOUTS FROM POINT OF CONNECTION TO BUILDING.

INTERNET SERVICE:
1. CONTRACTOR TO INSTALL 2-2" CONDUITS WITH PULL STRING FROM BUILDING TO CONNECTION POINT.

SEE COVER SHEET FOR UTILITY CONTACTS.

EXISTING

- EXISTING MAJOR CONTOUR (5460)
- EXISTING MINOR CONTOUR (52)
- EXISTING STORM SEWER (LESS THAN 12"ø) (SD)
- EXISTING SANITARY SEWER (SS)
- EXISTING WATER (W)
- EXISTING UNDERGROUND ELECTRIC (UE)
- EXISTING OVERHEAD ELECTRIC (OHE)
- EXISTING FIBER OPTIC (FO)
- EXISTING GAS (G)
- EXISTING STREET LIGHT
- EXISTING TRANSFORMER
- EXISTING ELECTRIC METER
- EXISTING ELECTRIC BOX
- EXISTING FIBER OPTIC BOX
- EXISTING GAS METER
- EXISTING SANITARY SEWER MANHOLE
- EXISTING WATER VALVE
- EXISTING STORM INLET
- EXISTING FIRE HYDRANT
- EXISTING SIGN
- EXISTING BOLLARD
- EXISTING TREE

PROPOSED

- BOUNDARY LINE
- WATER SERVICE (W)
- SANITARY SERVICE (SS)
- ELECTRICAL SERVICE (E)
- PROPOSED STORM SEWER (LESS THAN 12"ø) (SD)
- PROPOSED STORM SEWER (12"ø AND LARGER) (SD)

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

THESE DRAWINGS DO NOT INCLUDE COMPONENTS FOR CONSTRUCTION SAFETY

CAUTION – NOTICE TO CONTRACTOR

1. ALL UTILITY LOCATIONS SHOWN ARE BASED ON MAPS PROVIDED BY THE APPROPRIATE UTILITY COMPANY AND FIELD SURFACE EVIDENCE AT THE TIME OF SURVEY AND IS TO BE CONSIDERED AN APPROXIMATE LOCATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF ALL UTILITIES, PUBLIC OR PRIVATE, WHETHER SHOWN ON THE PLANS OR NOT, PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
2. WHERE A PROPOSED UTILITY CROSSES AN EXISTING UTILITY, IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF SUCH EXISTING UTILITY, EITHER THROUGH POTHOLING OR ALTERNATIVE METHOD. REPORT INFORMATION TO THE ENGINEER PRIOR TO CONSTRUCTION.

811 Know what's **below.** **Call** before you dig.

CITY OF LONE TREE

DATE

THE CONSTRUCTION PLANS HAVE BEEN REVIEWED BY THE CITY OF LONE TREE FOR SITE IMPROVEMENTS, STORM SEWER, GRADING AND EROSION CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

SHEET NO. C-6.1 Sheet 12 of 29

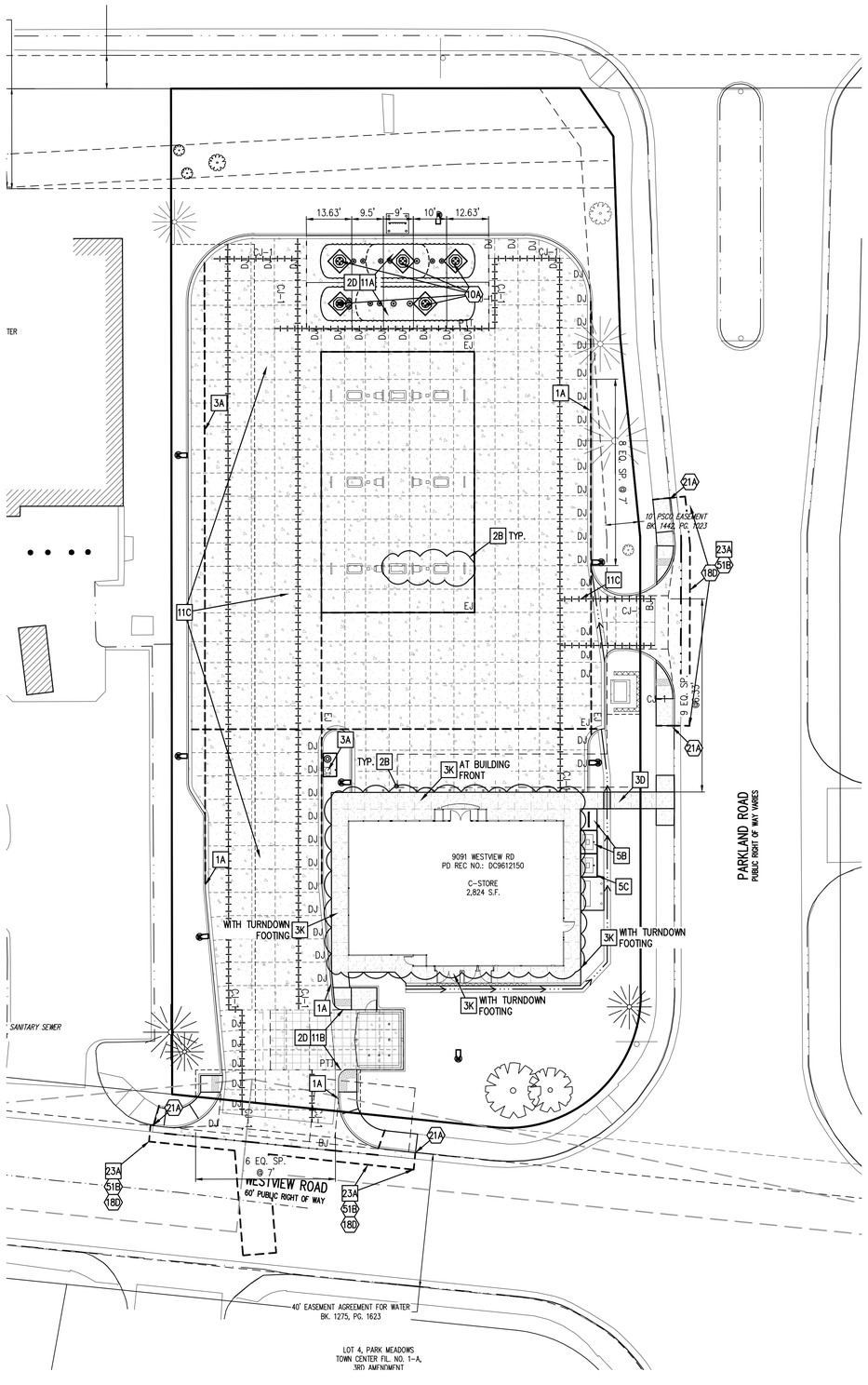
COLORADO LICENSED JOSEPH D. PAGE 42470 PROFESSIONAL ENGINEER

CD 4TH SUBMITTAL	11/05/26	MOC148	JDP	SE	DMH
	DATE	PRN	PM	DES	DRW

SANITARY PLAN
MURPHY USA (NTI)
9091 WESTVIEW RD
LONE TREE *COLORADO*

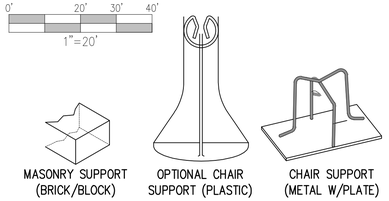
Galloway
5500 Greenwood Plaza Blvd, Suite 200
Greenwood Village, CO 80111
303.770.8884 • GallowayUS.com

MURPHY OIL USA, INC.
200 PEACH STREET
EL DORADO, AR 71730
MURPHY USA



0' 20' 30' 40'

1"=20'



NOTES:
1. CONTRACTOR SHALL UTILIZE THE APPROPRIATE SUPPORT DEVICE TO ACCEPT MESH OR REBAR REINFORCEMENT TYPES.
2. CHAIR SUPPORTS SHALL BE PLACED AT THREE FEET (3') O.C.E.W. MIN. SPACING.
3. SUPPORT SHALL BE SIZED TO PROVIDE ADEQUATE STRUCTURAL SUPPORT DURING CONSTRUCTION AND MAINTAIN THE REINFORCEMENT WITHIN THE CENTER OF THE PAVEMENT SECTION.

CHAIR SUPPORT FOR REINFORCED CONCRETE PAVEMENT 6A
N.T.S.

1 TOPSOIL / EXISTING PAVEMENT LAYER – REMOVE EXISTING PAVEMENT SECTION, SURFICIAL VEGETATION (6" MIN.) INCLUDING ORGANIC LADEN TOPSOIL, TREES, ROOTS, SOFT SOILS AND OTHER UNSUITABLE MATERIALS INCLUDING AND 5' BEYOND CONSTRUCTION LIMITS FROM THE SITE. THE TOPSOIL AND VEGETATION MATERIAL MAY BE STOCKPILED FOR USE IN LANDSCAPING OR REMOVE FROM SITE AS DIRECTED BY OWNER.

2 EXISTING SUBGRADE – EXISTING SOILS AT TIME OF GEOTECH INVESTIGATION WERE FOUND TO BE EXCESSIVELY WET. EXISTING SOILS SHALL BE REMOVED TO ALLOW FOR PLACEMENT OF 24" OF SELECT ENGINEERED FILL BENEATH PAVEMENT. PRIOR TO FILL PLACEMENT, SUBGRADE SHALL BE PROOFROLLED WITH A HEAVY, LOADED PNEUMATIC-TIRED VEHICLE (20 TO 25 TON LOADED DUMP TRUCK) IN TWO PERPENDICULAR DIRECTIONS FOR COMPLETE COVERAGE. ANY AREAS WHICH EXHIBIT RUTTING OR PUMPING, SHALL BE REMOVE/REPLACED OR TREATED AS RECOMMMENDED BY GEOTECHNICAL ENGINEER.

AS AN ALTERNATIVE TO THE REMOVAL AND REPLACEMENT OF EXISTING MATERIAL TO ALLOW FOR 24" OF SELECT ENGINEERED FILL BENEATH PAVEMENT, EXISTING SUBGRADE MAY BE LIME TREATED TO 12" BENEATH PAVEMENT (6% OF DRY UNIT WEIGHT).

3 PROPOSED PAVEMENT AND BASE MATERIAL (RE: THIS SHEET)

4 FILL MATERIAL (IMPORTED MATERIAL) – SHALL CONSIST OF HOMOGENOUS SOILS FREE OF ORGANIC MATTER AND DEBRIS, OR PARTICLES LARGER THAN THREE (3) INCHES IN DIAMETER WITH LIQUID LIMIT LESS THAN 40, PLASTICITY INDEX BETWEEN 10 AND 20, AND CONSIST OF CLAYEY OR SILTY SANDS OR SANDY CLAY SOIL (SC, SM OR CL), AS DEFINED BY THE UNIFIED CLASSIFICATION SYSTEM. SELECT FILL SHOULD BE PLACED IN MAXIMUM LIFTS OF 8" AND BE COMPACTED TO AT LEAST 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D-1557).

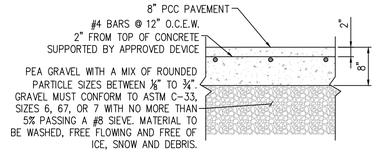
TYPICAL EARTHWORK SECTIONS 5E
N.T.S.



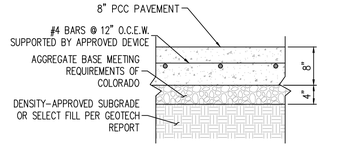
EXISTING SECTION



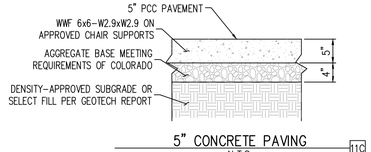
PROPOSED UNDER SECTION PAVEMENT



8" CONCRETE PAVING FOR TANK PIT PAD 11A
N.T.S.



8" CONCRETE PAVING FOR DUMPSTER PAD 11B
N.T.S.



5" CONCRETE PAVING 11C
N.T.S.

NOTES:
1. CONCRETE SHALL BE 4,000 PSI COMPRESSIVE STRENGTH.
2. SEE SHEET C-13 FOR CONCRETE SPECIFICATIONS.

CONCRETE PAVING
DESIGN WIND SPEED= 130 M.P.H.

PAVING NOTES

18D	MATCH EXISTING PAVEMENT ELEVATIONS
21A	TAPER CURB TO MATCH EXISTING CURB
23A	ASPHALT BUTTING JOINT
51B	LIMITS OF SAWCUT AND PAVEMENT REMOVAL

PAVING DETAILS

1A	INTEGRAL CONCRETE CURB
3A	AIR/VAC UNIT MOUNTING SLAB
3D	CONCRETE SIDEWALK
3K	CONCRETE SIDEWALK AT BUILDING
5B	ICE BOX MOUNTING SLAB
5C	PROPANE BOX MOUNTING SLAB
11A	8" HEAVY DUTY CONCRETE PAVING FOR TANK PAD
11B	8" HEAVY DUTY CONCRETE DUMPSTER PAD
11C	5" CONCRETE PAVING

JOINT LAYOUT NOTES

10A	TANK MANHOLE REINFORCEMENT (SEE NOTE 6 IN THE GENERAL JOINT NOTES, THIS SHEET)

JOINT LAYOUT DETAILS – SEE DETAIL SHEETS C-7.1

2B	TOOLED CONTROL JOINT
2D	#4 SMOOTH DOWEL BARS @ 24" O.C. (12" LONG)
23A	ASPHALT BUTTING JOINT

SOIL PREPARATION & PAVEMENT DESIGN NOTE

SOIL PREPARATION AND PAVEMENT DESIGN SHALL BE PER RECOMMENDATIONS FROM A GEOTECHNICAL REPORT PREPARED FOR THIS SITE AS FOLLOWS: GEOTECHNICAL ENGINEERING EXPLORATION AND ANALYSIS: PROPOSED MURPHY OIL USA FUEL STATION

GEOTECHNICAL ENGINEER: UNITED CONSULTING

PROJECT NO: MPOIL-25-CO-09967-02
DATE: FEBRUARY 27, 2026

THE CONTRACTOR MUST FULLY REVIEW THIS REPORT PRIOR TO CONSTRUCTION. INFORMATION IN THE GEOTECHNICAL REPORT SUPERSEDES ANY CONFLICTING INFORMATION CONTAINED IN THE CONSTRUCTION PLANS AND SPECIFICATIONS. REFER TO GENERAL STRUCTURAL NOTES FOR SPECIFIC SOIL PREPARATION AT SITE STRUCTURES.

PAVING LEGEND

- CONCRETE SIDEWALK
- CONCRETE SIDEWALK AT BUILDING
- 8" HEAVY DUTY CONCRETE PAVING FOR TANK PAD
- 8" HEAVY DUTY CONCRETE DUMPSTER PAD
- 5" CONCRETE PAVING

JOINT LEGEND

- DJ – DUMMY JOINT (DJ)
- EJ – EXPANSION JOINT (EJ)
- CJ-1 – CONSTRUCTION JOINT (CJ-1)
- PTT – PAVEMENT THICKNESS TRANSITION
- BJ – ASPHALT BUTTING JOINT

GENERAL PAVING NOTES

1. CONCRETE ON ASPHALT UTILITY CUT REPAIR TO BE DYED TO MATCH SURROUND ASPHALT.
2. UNLESS OTHERWISE SHOWN, CALLED OUT OR SPECIFIED HEREON ALL CURB AND GUTTER ADJACENT TO ASPHALT PAVING SHALL BE INSTALLED PER DETAIL 1A (SEE DETAILS SHEET C-9)
3. SEE ASSOCIATED PLANS FOR CANOPY, COLUMN, DISPENSER ISLAND DETAILS AND LAYOUT.
4. SURFACE COURSE, BASE, AND SUB-GRADE SHALL BE PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS FOR LOCAL SOILS OR DRAINAGE CONDITIONS AND/OR METHODS.
5. SUBGRADE SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR OR AS SPECIFIED BY THE GEOTECHNICAL REPORT WHICHEVER IS MORE STRINGENT.
6. FOLLOW RECOMMENDATIONS IN GEOTECH REPORT FOR REINFORCEMENT OF CONCRETE SECTIONS.
7. FOLLOW RECOMMENDATIONS IN GEOTECH REPORT FOR PERMANENT UNDERDRAINS IN THE PAVEMENT AREAS.

GENERAL JOINT NOTES

1. THIS PLAN IS FOR RELATIVE LAYOUT AND SCOPE OF WORK PURPOSES ONLY. REFER TO SITE PLAN FOR RELATIONSHIP OF THESE STRUCTURE TO EXISTING CONDITIONS AND REFERENCE POINTS.
2. ½" FOAM EXPANSION JOINT MATERIAL SHALL SURROUND THE CANOPY COLUMNS, U-BUMPERS, BOLLARDS AND DISPENSER ISLANDS AT GRADE.
3. DOWELED JOINTS SHALL BE LOCATED ON 12" CENTERS, ALONG THE INSIDE OF THE MOST EXTERIOR SLABS. DOWELS SHALL BE SMOOTH TYPE AND INSERTED INTO GREENSTREAK SPEED DOWEL FORMS. THE DOWEL IS LOCATED AT MID-SLAB DEPTH AND HELD IN PLACE LEVEL AND PERPENDICULAR TO THE JOINT USING THE SPEED DOWEL, WHICH REMAINS WITH THE FORM. AFTER THE FORMS ARE STRIPPED, THE DOWELS SHOULD BE CHECKED TO ASSURE FULL INSERTION AND ALIGNMENT IN THE INITIAL SLAB BEFORE POURING THE ADJACENT SLAB. DOWELS OCCURRING UNDER AND PARALLEL TO CONTROL JOINTS SHOULD BE DELETED. SEE TANK-PIPING PLANS FOR ADDITIONAL INFORMATION. SEE TANK-PIPING PLANS FOR ADDITIONAL INFORMATION.
4. TANK SLAB SHALL EXTEND 2'-0" (MIN.) BEYOND TANK EDGE IN ALL DIRECTIONS.
5. CHAMFER CORNER WHEN MEETING ASPHALT PAVING ONLY (24" EACH SIDE). SQUARE CORNERS WHERE MEETING CONCRETE PAVING.
6. REINFORCE CONCRETE SLAB AROUND MANHOLE WITH 4 #5 REBAR 96" IN LENGTH ON EACH OF FOUR SIDES. PLACE REBAR 6" FROM SIDES OF SKIRT BOX. REINFORCING BARS TO BE A MINIMUM OF 2" AND MAX OF 4" FROM TOP OF CONCRETE. BARS SHALL BE SET ON A 45° ANGLE TO TYPICAL REINFORCING SHOWN IN DETAIL 11A.
7. EXPANSION JOINTS SHALL BE FILLED WITH SIKAFLEX-1C-SL (LIMESTONE).

CAUTION – NOTICE TO CONTRACTOR

1. ALL UTILITY LOCATIONS SHOWN ARE BASED ON MAPS PROVIDED BY THE APPROPRIATE UTILITY COMPANY AND FIELD SURFACE EVIDENCE AT THE TIME OF SURVEY AND IS TO BE CONSIDERED AN APPROXIMATE LOCATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF ALL UTILITIES, PUBLIC OR PRIVATE, WHETHER SHOWN ON THE PLANS OR NOT, PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
2. WHERE A PROPOSED UTILITY CROSSES AN EXISTING UTILITY, IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF SUCH EXISTING UTILITY, EITHER THROUGH POTHOLING OR ALTERNATIVE METHOD. REPORT INFORMATION TO THE ENGINEER PRIOR TO CONSTRUCTION.

811 Know what's **below.** **Call** before you dig.

SEE SHEET C-13.0 FOR CONCRETE SPECIFICATIONS AND SHEET C-13.1 EARTHWORK SPECIFICATIONS

THESE DRAWINGS DO NOT INCLUDE COMPONENTS FOR CONSTRUCTION SAFETY

CITY OF LONE TREE

DATE

THE CONSTRUCTION PLANS HAVE BEEN REVIEWED BY THE CITY OF LONE TREE FOR SITE IMPROVEMENTS, STORM SEWER, GRADING AND EROSION CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

SHEET NO. C-7.0
Sheet 13 of 29

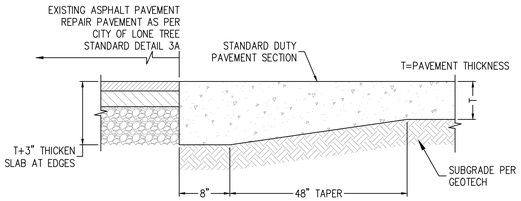
COLORADO LICENSED JOSEPH D. PAGE 42470 PROFESSIONAL ENGINEER

CD 4TH SUBMITTAL	11/05/26	MOC148	PRN	JDP	PM
	DATE			SE	DES
					DRW

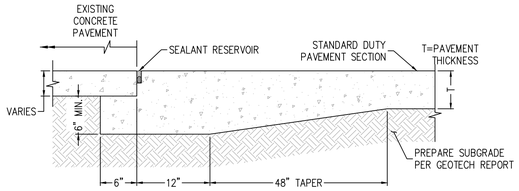
PAVEMENT & JOINTING PLAN
MURPHY USA (NTI)
9091 WESTVIEW RD
LONE TREE COLORADO

Galloway
5500 Greenwood Plaza Blvd., Suite 200
Greenwood Village, CO 80111
303.770.8884 • GallowayUS.com

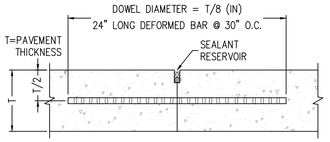
MURPHY OIL USA, INC.
MURPHY USA
200 PEACH STREET
EL DORADO, AR 71730



BUTTING JOINT – ASPHALT 2A
N.T.S.

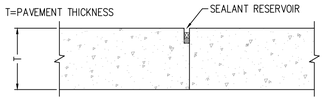


BUTTING JOINT – CONCRETE 2B
N.T.S.



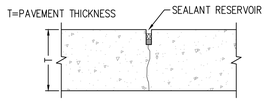
NOTES:
1. THIS DETAIL SHOULD BE UTILIZED ON THE JOINT ALONG THE ENTIRE PERIMETER OF THE PAVEMENT.
2. TIE BARS SHALL BE SUPPORTED BY AN APPROVED DEVICE.

CONSTRUCTION JOINT (CJ–1)
DESIGN WIND SPEED= 130 M.P.H.

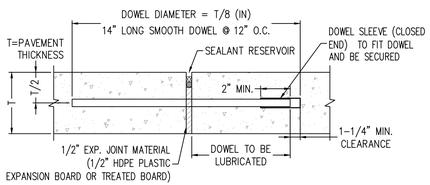


NOTES:
1. THIS DETAIL IS NOT APPLICABLE ALONG OUTER PERIMETER OF PAVED AREA.
2. THIS DETAIL SHALL BE USED AS REQUIRED FOR CONSTRUCTION PURPOSES.

CONSTRUCTION JOINT (CJ–2)
DESIGN WIND SPEED= 130 M.P.H.

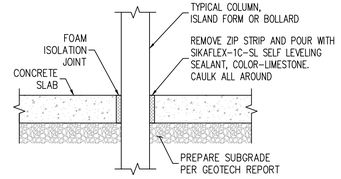


DUMMY JOINT (DJ)
DESIGN WIND SPEED= 130 M.P.H.



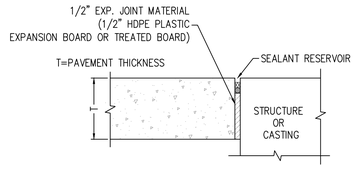
NOTE:
1. DOWELS SHALL BE SUPPORTED BY AN APPROVED DEVICE.

EXPANSION JOINT (EJ)
DESIGN WIND SPEED= 130 M.P.H.



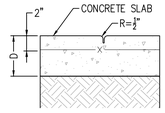
NOTES:
1. CONTRACTOR TO INSTALL FOAM ISOLATION JOINTS AROUND ALL CONCRETE TO METAL JOINTS (I.E. COLUMNS, ISLANDS BOLLARDS, HOSE BIBB, ETC.)
2. CONTRACTOR TO USE DECK–O–FOAM, ASSHTO–M–153–84, BY SEALTIGHT OR EQUIVALENT.

FOAM ISOLATION JOINT (IJ) 2F
N.T.S.

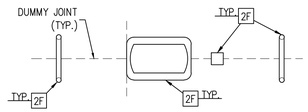


NOTE:
1. TO BE USED ADJACENT TO NON–STRUCTURAL COMPONENTS (IE: CATCH BASINS, ELECTRICAL BOX, ETC.)

ISOLATION JOINT (IJ)
DESIGN WIND SPEED= 130 M.P.H.

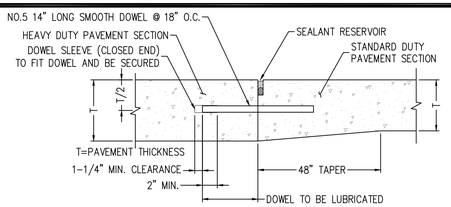


TOOLED CONTROL JOINT USE
"KRAFT TOOL CO." EXTRA DEEP
BIT BRONZE GROVER #CF–317



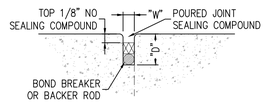
NOTE:
1. REQUIRED ADJACENT TO BUILDINGS, COLUMNS, BOLLARDS AND DISPENSER ISLANDS ONLY.

TOOLED CONTROL JOINT 2B
N.T.S.



NOTES:
1. THIS DETAIL SHOULD BE UTILIZED ON JOINTS SEPARATING PAVEMENTS OF DIFFERING THICKNESS.
2. DOWELS SHALL BE SUPPORTED BY AN APPROVED DEVICE.

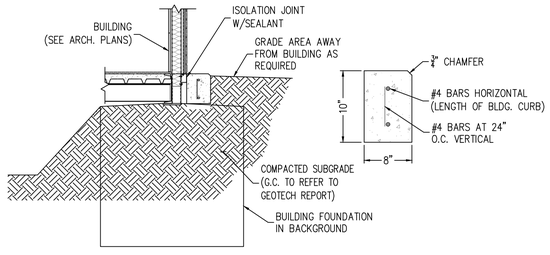
PAVEMENT THICKNESS TRANSITION
DESIGN WIND SPEED= 130 M.P.H.



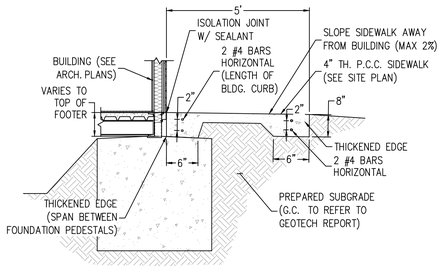
DIMENSION	SAWCUT	FORMED
"W"	1/8" – 1/4"	1/2"
"D"	1"	1 1/8"

NOTES:
1. SEALANT RESERVOIR CAN BE FORMED (CAST–IN–PLACE) OR SAWCUT.
2. SEALANT SHALL BE SIKAFLEX–1C–SL SELF LEVELING SEALANT, COLOR LIMESTONE.
3. PROVIDE 3/4" BACKER ROD FOR FORMED SEALANT RESERVOIR.
4. PROVIDE BOND BREAKER FOR SAWCUT SEALANT RESERVOIR.
5. TOOL 1/2" RADIUS FOR FORMED SEALANT RESERVOIR.

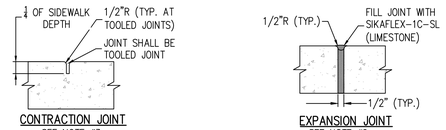
SEALANT RESERVOIR DETAIL
(ADJACENT TO STRUCTURES) 2G
N.T.S.



BARRIER CURB AT BUILDING INTERFACE (WHERE SIDEWALK NOT INSTALLED AND/OR WHERE LANDSCAPING IS ADJACENT TO BUILDING) 34B
N.T.S.

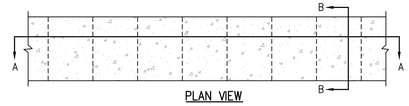


SIDEWALK AT BUILDING INTERFACE W/ THICKENED EDGE 34A
N.T.S.

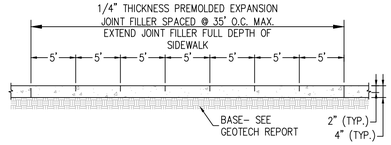


CONTRACTION JOINT
SEE NOTE #3

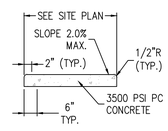
EXPANSION JOINT
SEE NOTE #6



PLAN VIEW



SECTION A–A



SECTION B–B

NOTES:
1. REINFORCEMENT SHALL BE NO.3 BARS, 24" O.C. EACH WAY OR 6 X 6 –W1.4 X W1.4 WWF. REINFORCEMENT SHALL BE PLACED 2" FROM TOP OF SIDEWALK WHERE REQUIRED.
2. CONCRETE SHALL BE 3,500 PSI.
3. CONTRACTION JOINTS SHALL BE PLACED A MAXIMUM OF 5' O.C.
4. TOOLED JOINTS SHALL BE PLACED IN FRESH CONCRETE WITH A MINIMUM DEPTH OF 1/4 OF THE TOTAL DEPTH OF SIDEWALK. TOOLED JOINT SHALL ALSO HAVE A MINIMUM 1/2" RADIUS ON EXPOSED EDGES.
5. FULL DEPTH EXPANSION JOINTS SHALL BE PLACED A MAXIMUM OF 35' O.C. PREMOLDED JOINT FILLER SHALL BE INSTALLED AT ALL EXPANSION JOINTS. EXTEND JOINT FILLERS FULL WIDTH AND DEPTH OF JOINT, AND NOT LESS THAN 1/2" OR MORE THAN 1" BELOW FINISHED SURFACE. JOINT SEALANT SHALL BE PLACED ABOVE JOINT FILLER IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
6. A FULL DEPTH EXPANSION JOINT SHALL BE PLACED WHERE THE SIDEWALK ABUTS THE BUILDING. PREMOLDED JOINT FILLER SHALL BE INSTALLED AT FULL DEPTH OF JOINT, AND NOT LESS THAN 1/2" OR MORE THAN 1" BELOW FINISHED SURFACE. JOINT SEALANT SHALL BE PLACED ABOVE JOINT FILLER IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

CONCRETE SIDEWALK 3D
N.T.S.

CITY OF LONE TREE

DATE

THE CONSTRUCTION PLANS HAVE BEEN REVIEWED BY THE CITY OF LONE TREE FOR SITE IMPROVEMENTS, STORM SEWER, GRADING AND EROSION CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

SHEET NO. C-7.1
Sheet 14 of 29

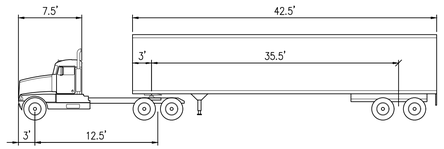
COLORADO LICENSED
JOSEPH D. PAGE
42470
PROFESSIONAL ENGINEER

CD 4TH SUBMITTAL	11/05/26	MOC148	JDP	SE	DMH
	DATE	PRN	PM	DES	DRW

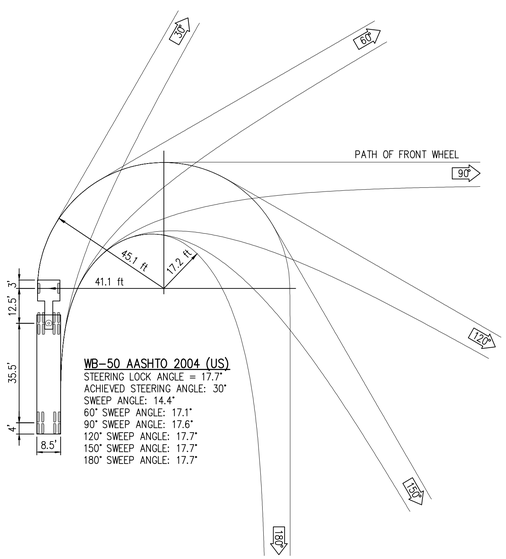
JOINT DETAILS
MURPHY USA (NTI)
9091 WESTVIEW RD
LONE TREE COLORADO

Galloway
5500 Greenwood Plaza Blvd., Suite 200
Greenwood Village, CO 80111
303.770.8884 • GallowayUS.com

MURPHY OIL USA, INC.
200 PEACH STREET
EL DORADO, AR 71730
MURPHY USA

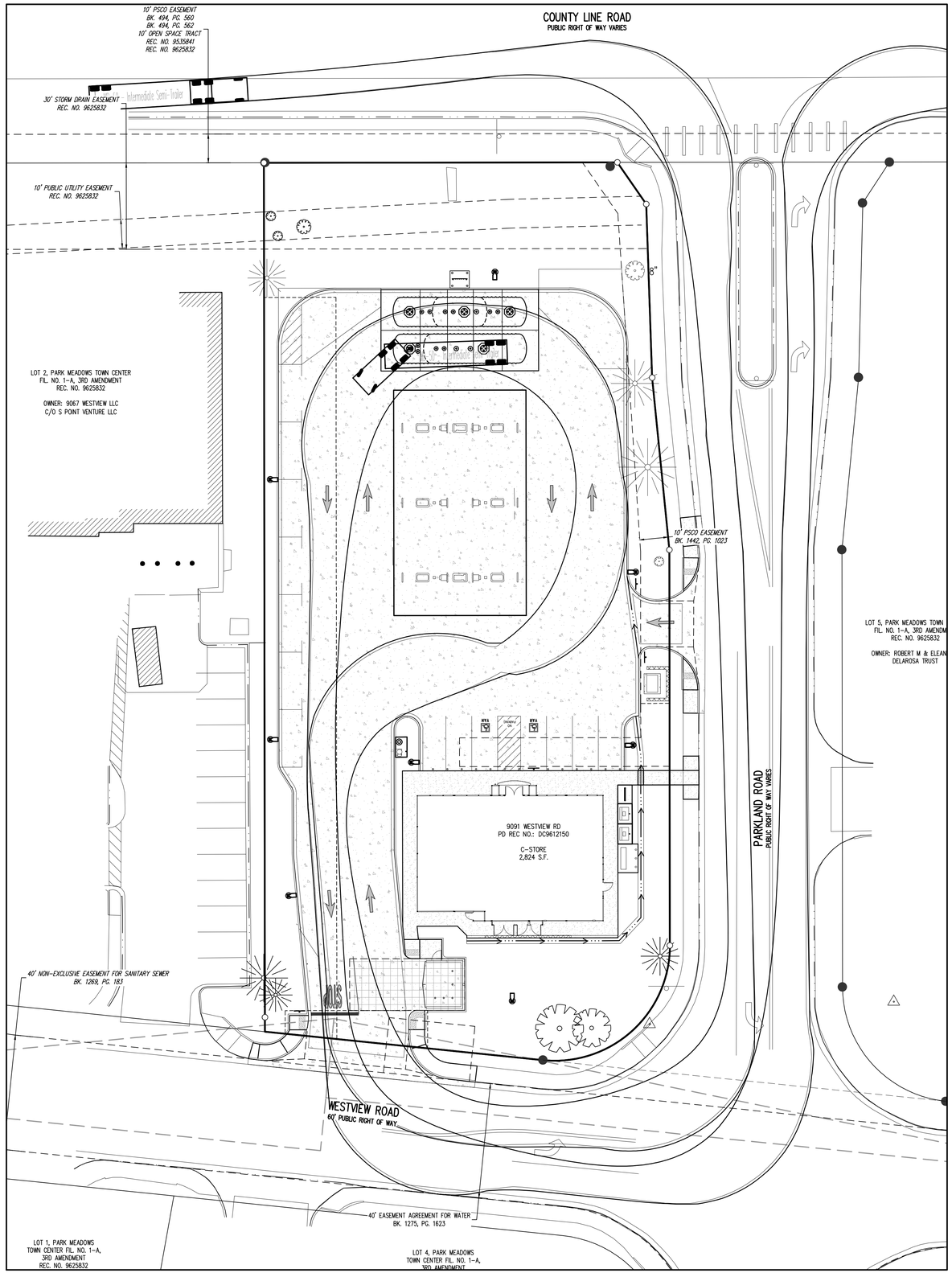


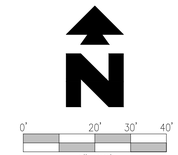
WB-50
TRACTOR WIDTH: 8'
TRAILER WIDTH: 8.5'
TRACTOR TRACK: 8'
TRAILER TRACK: 8.5'
LOCK TO LOCK TIME: 6.0
STEERING ANGLE: 17.7
ARTICULATING ANGLE: 70



WB-50 AASHTO 2004 (US)
STEERING LOCK ANGLE = 17.7°
ACHIEVED STEERING ANGLE: 30°
SWEEP ANGLE: 14.4°
60° SWEEP ANGLE: 17.1°
90° SWEEP ANGLE: 17.6°
120° SWEEP ANGLE: 17.7°
150° SWEEP ANGLE: 17.7°
180° SWEEP ANGLE: 17.7°

WB 50 TRUCK PROFILE





PROPOSED
BOUNDARY LINE
CURB AND GUTTER

THESE DRAWINGS DO NOT INCLUDE COMPONENTS FOR CONSTRUCTION SAFETY

CAUTION – NOTICE TO CONTRACTOR

1. ALL UTILITY LOCATIONS SHOWN ARE BASED ON MAPS PROVIDED BY THE APPROPRIATE UTILITY COMPANY AND FIELD SURFACE EVIDENCE AT THE TIME OF SURVEY AND IS TO BE CONSIDERED AN APPROXIMATE LOCATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF ALL UTILITIES, PUBLIC OR PRIVATE, WHETHER SHOWN ON THE PLANS OR NOT, PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
2. WHERE A PROPOSED UTILITY CROSSES AN EXISTING UTILITY, IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF SUCH EXISTING UTILITY, EITHER THROUGH POTHOLING OR ALTERNATIVE METHOD. REPORT INFORMATION TO THE ENGINEER PRIOR TO CONSTRUCTION.

811 Know what's **below.** **Call** before you dig.

CITY OF LONE TREE

DATE

THE CONSTRUCTION PLANS HAVE BEEN REVIEWED BY THE CITY OF LONE TREE FOR SITE IMPROVEMENTS, STORM SEWER, GRADING AND EROSION CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

SHEET NO. C-8.0
Sheet 15 of 29

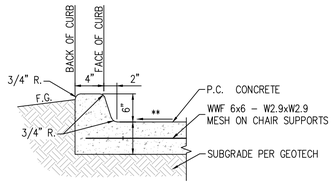
COLORADO LICENSED
JOSEPH D. PAGE
42470
PROFESSIONAL ENGINEER
11/05/26

CD 4TH SUBMITTAL	11/05/26 DATE	MOC148 PRN	JDP PM	SE DES	DMH DRW

SITE CIRCULATION PLAN
MURPHY USA (NTI)
9091 WESTVIEW RD
LONE TREE *COLORADO*

Galloway
5500 Greenwood Plaza Blvd, Suite 200
Greenwood Village, CO 80111
303.770.8884 • GallowayUS.com

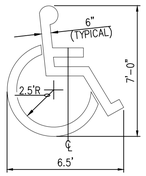
MURPHY OIL USA, INC.
MURPHY USA
200 PEACH STREET
EL DORADO, AR 71730



T = PAVEMENT THICKNESS

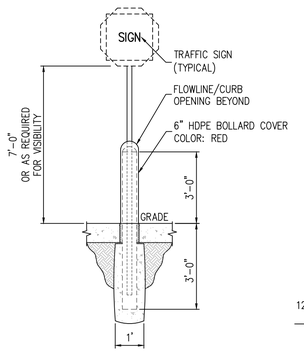
NOTE:
** GUTTER SLOPE TO MATCH ADJACENT PAVEMENT, TRAVERSE AND LONGITUDINAL

INTEGRAL CURB (1A)
N.T.S.



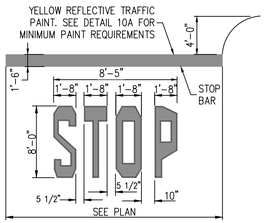
NOTES:
1. LOCATE AT EDGE OF PARKING SPACE UNLESS ACCOMPANIED BY "VAN" LETTERING.
2. COLOR PER ADA REQUIREMENTS

ACCESSIBLE PARKING SYMBOL (9H)
N.T.S.



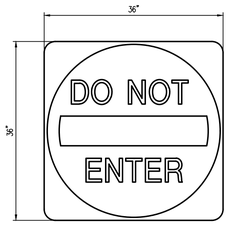
NOTE:
1. ALL TRAFFIC SIGNS TO BE INSTALLED IN BOLLARD.

SIGN IN BOLLARD (5B)
N.T.S.



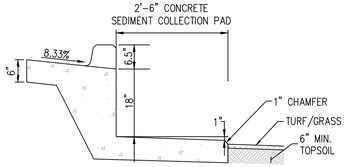
NOTE:
1. YELLOW REFLECTIVE TRAFFIC PAINT. SEE DETAIL 10A FOR MINIMUM PAINT REQUIREMENTS

STOP BAR (10B)
N.T.S.



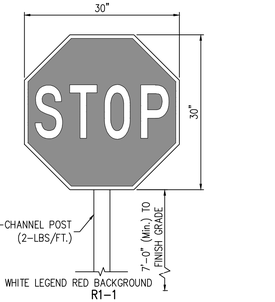
NOTES:
1. SIGN DETAILS ARE PROVIDED AS A MINIMUM STANDARD ONLY.
2. SIGNS SHALL COMPLY WITH JURISDICTION HAVING AUTHORITY.
3. CONTRACTOR SHALL COORDINATE WITH JURISDICTION HAVING AUTHORITY, SUPPLY & INSTALL.

MUTCD R5-1 "DO NOT ENTER" SIGN DETAIL (12H)
N.T.S.



SECTION (A)

CURB CUT WITH SEDIMENT PAD (1E)
N.T.S.



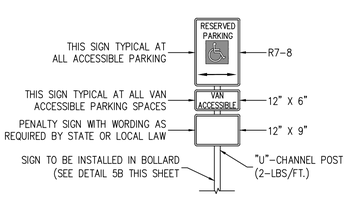
NOTE:
1. SIGN TO BE INSTALLED IN BOLLARD (SEE DETAIL 5B THIS SHEET)

STOP SIGN (2G)
N.T.S.



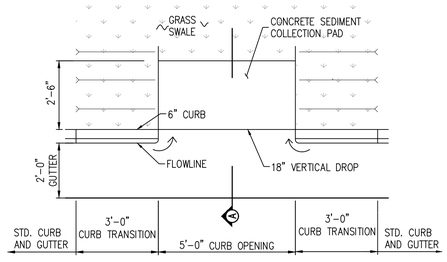
NOTES:
1. ALL LETTERS TO BE CAPITAL.
2. LETTER HEIGHT 12" MIN. AND STROKE WIDTH OF 2" MIN.

"NO PARKING" ON PAVEMENT (9K)
N.T.S.

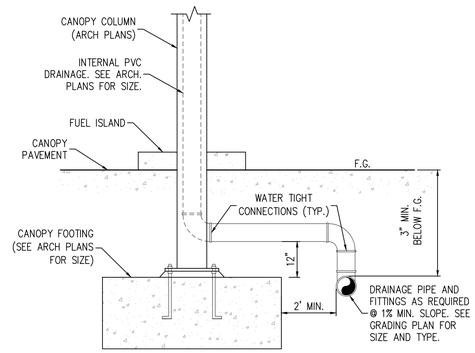


NOTE:
1. SIGN TO BE INSTALLED IN BOLLARD (SEE DETAIL 5B THIS SHEET)

ACCESSIBLE PARKING SIGN (9V)
N.T.S.

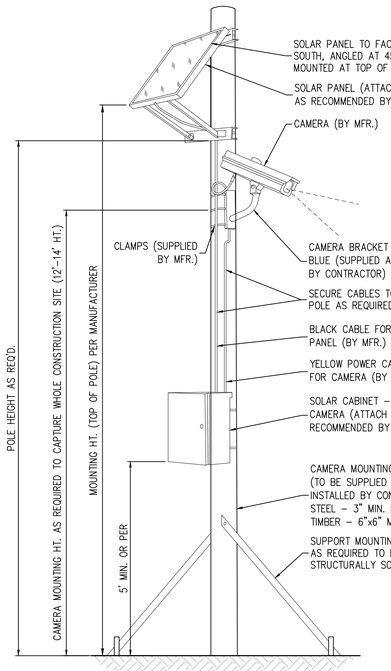


PLAN



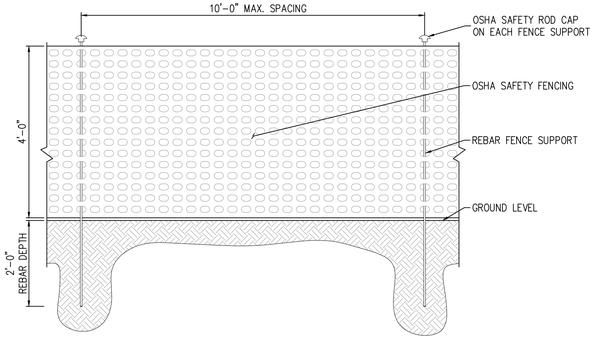
NOTES:
1. PIPE MUST BE SCHEDULE 40 PVC
2. WATER TIGHT CONNECTIONS REQUIRED.
3. COORDINATE DOWNSPOUT COLLECTION PIPE WITH PRODUCT PIPING TO AVOID CONFLICTS.

DOWNSPOUT COLLECTOR (6B)
N.T.S.

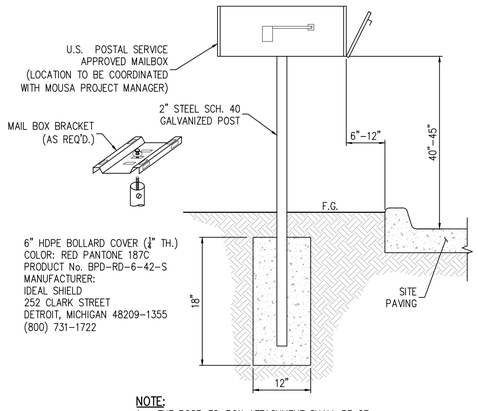


NOTES:
1. CAMERA AND SOLAR POWER STATION BY OX BLUE CORPORATION.
2. CAMERA TO BE INSTALLED AND ACTIVATED PER MFR. REQUIREMENTS BY GC PRIOR TO CONSTRUCTION.
3. MOUNTING POLE TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.
4. LAG BOLTS/CLAMPS USED TO ATTACH CAMERA, SOLAR PANEL AND CABINET TO POLE ARE TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.
5. CONSTRUCTION CAMERA SHALL BE COORDINATED WITH MURPHY CONSTRUCTION MANAGER AND PLACED ON MURPHY PROPERTY WHERE THE ENTIRE WORK SITE CAN BE VIEWED WITH CAMERA.
6. MOUNTING POLE TO BE STRUCTURALLY SOUND & WITHSTAND 300 LBS OF FORCE AT 5' ABOVE GROUND.
7. FOR ANY MOUNTING OF CAMERA ON OFF-SITE STRUCTURE, CONTRACTOR MUST SECURE PERMITS AND/OR PERMISSION FROM RESPECTIVE OWNER AND PROVIDE TO MURPHY.
8. MOUNTING CAMERA SYSTEM ON JOB SHACK IS NOT ALLOWED.

CONSTRUCTION CAMERA (10B)
N.T.S.

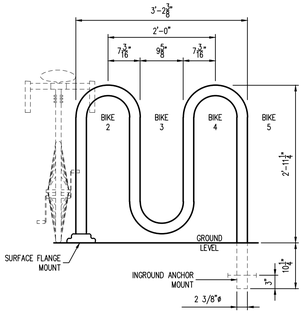


CONSTRUCTION SAFETY FENCE (2F)
N.T.S.

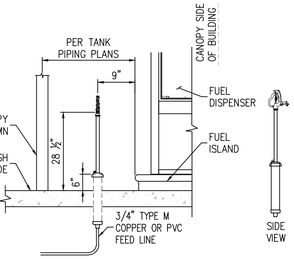


NOTE:
1. THE POST-TO-BOX ATTACHMENT SHALL BE OF SUFFICIENT STRENGTH TO PREVENT THE BOX FROM SEPARATING FROM THE POST TOP IF THE INSTALLATION IS STRUCK BY AN AUTOMOBILE OR LIGHT TRUCK.

MAIL BOX (21)
N.T.S.

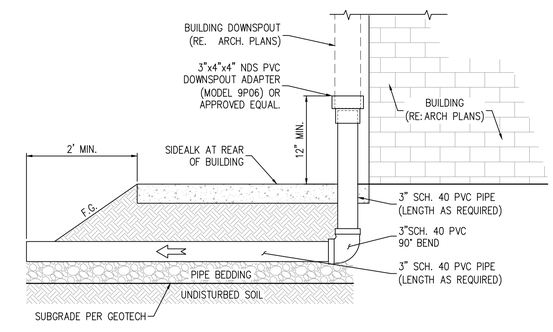


BICYCLE RACK DETAIL
NOT TO SCALE



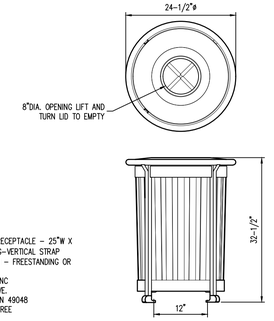
NOTES:
1. CONTRACTOR TO PROVIDE AND INSTALL WOODFORD MODEL S-3 SANITARY YARD HYDRANT PER MANUFACTURER'S SPECIFICATIONS. SEE UTILITY PLAN TO DETERMINE LOCATION.
2. FREEZELESS YARD HYDRANT TO BE LOCATED BETWEEN CANOPY COLUMN AND FUEL ISLAND FOR PROTECTION.
3. REFER TO TANK/PIPING PLANS TO VERIFY LOCATION OF TRASH CAN LOCATION PRIOR TO INSTALLATION.

FREEZLESS HYDRANT WITH HOSE BIB (20A)
N.T.S.



NOTES:
1. SEE CANOPY DRAINAGE SHEET FOR CONTINUATION.
2. CONTRACTOR TO VERIFY THERE ARE NO CONFLICTS WITH OTHER UTILITY CONDUITS WHEN INSTALLING UNDERGROUND DRAINAGE PIPES.
3. ROOF DRAINAGE SHALL BE PVC SCH. 40.
4. ROOF DRAINAGE PIPE SHALL HAVE SMOOTH INTERIOR.

ROOF DRAIN DOWNSPOUT CONNECTION (6H)
N.T.S.



NOTE:
SCARBOUGH LITTER RECEPTACLE – 25"W X 33"H – TOP OPENING–VERTICAL STRAP DETAIL – 30 GALLON – FREESTANDING OR SURFACE MOUNT
LANDSCAPE FORMS, INC
7800 E. MICHIGAN AVE.
KALAMAZOO, MICHIGAN 49048
800.430.6209 TOLL FREE
269.381.0396 PHONE
269.381.3455 FAX

TRASH RECEPTACLE
SCALE: 3/4" = 1'-0"

CITY OF LONE TREE

DATE

THE CONSTRUCTION PLANS HAVE BEEN REVIEWED BY THE CITY OF LONE TREE FOR SITE IMPROVEMENTS, STORM SEWER, GRADING AND EROSION CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

SHEET NO. C-9.0
Sheet 16 of 29

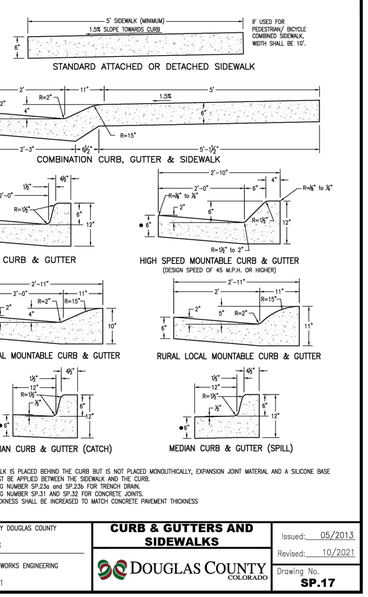
COLORADO LICENSED
JOSEPH D. PAGE
42470
PROFESSIONAL ENGINEER
11/10/2026

CD 4TH SUBMITTAL	11/05/26	MOC148	JDP	SE	DMH
	DATE	PRN	PM	DES	DRW

SITE DETAILS
MURPHY USA (NTI)
9091 WESTVIEW RD
LONE TREE COLORADO

MURPHY OIL USA, INC.
MURPHY USA
200 PEACH STREET
EL DORADO, AR 71730

Galloway
5500 Greenwood Plaza Blvd., Suite 200
Greenwood Village, CO 80111
303.770.8884 • GallowayUS.com



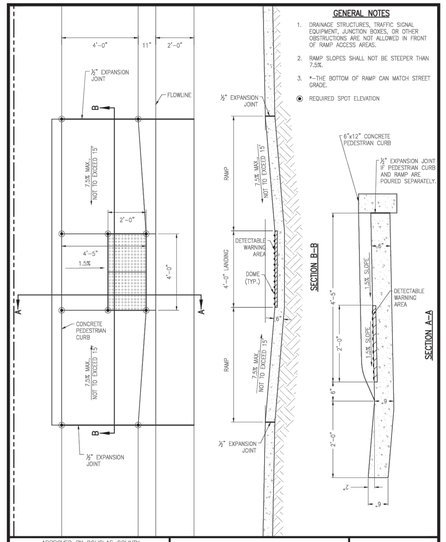
NOTES:
1. IF A SIDEWALK IS PLACED BEHIND THE CURB BUT IS NOT PLACED MONOLITHICALLY, EXPANSION JOINT MATERIAL AND A SILICONE BASE SEALER MUST BE APPLIED BETWEEN THE SIDEWALK AND THE CURB.
2. SEE DRAWING NUMBER SP.23a and SP.23b FOR TRENCH DRAIN.
3. SEE DRAWING NUMBER SP.31 AND SP.32 FOR CONCRETE JOINTS.
- GUTTER THICKNESS SHALL BE INCREASED TO MATCH CONCRETE PAVEMENT THICKNESS

APPROVED BY DOUGLAS COUNTY
Janet Herman
JANET HERMAN, P.E.
DIRECTOR OF PUBLIC WORKS ENGINEERING
DATE 10/1/2021

CURB & GUTTERS AND SIDEWALKS

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised: 10/2021
Drawing No. **SP.17**

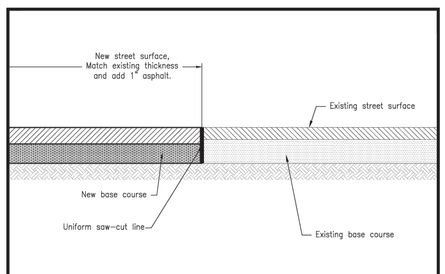


APPROVED BY DOUGLAS COUNTY
Janet Herman
JANET HERMAN, P.E.
DIRECTOR OF PUBLIC WORKS ENGINEERING
DATE 06/18/2021

MID-BLOCK CURB RAMP

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised: 07/2020
Drawing No. **SP.20**



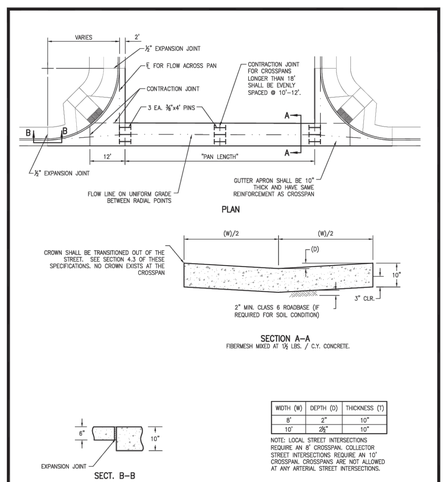
NOTES:
1. This Street Cut/Patching detail specifies requirements in addition to those specified in the latest edition of the Colorado Department of Transportation's Standard Specifications for Road and Bridge Construction.
2. A Construction Traffic Control Plan shall be submitted to and approved by Douglas County prior to issuance of Construction Permits in the County Right-Of-Way.
3. Pavement edges shall be saw-cut and kept to a neat vertical edge prior to paving.
4. Edges shall be tack coated prior to patching.

APPROVED BY DOUGLAS COUNTY
Janet Herman
JANET HERMAN, P.E.
DIRECTOR OF PUBLIC WORKS ENGINEERING
DATE 06/18/2021

ASPHALT STREET CUT/PATCHING

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised: 05/2021
Drawing No. **SP.62**



WIDTH (W)	DEPTH (D)	THICKNESS (T)
8'	2"	10"
10'	2½"	10"

NOTE: LOCAL STREET INTERSECTIONS REQUIRE AN 8' CROSSPAN. COLLECTOR STREET INTERSECTIONS REQUIRE AN 10' CROSSPAN. CROSSPANS ARE NOT ALLOWED AT ANY ARTERIAL STREET INTERSECTIONS.

CROSSPAN

DOUGLAS COUNTY COLORADO

Issued: 05/2013
Revised: 09/2017
Drawing No. **SP.21**

CITY OF LONE TREE

DATE

THE CONSTRUCTION PLANS HAVE BEEN REVIEWED BY THE CITY OF LONE TREE FOR SITE IMPROVEMENTS, STORM SEWER, GRADING AND EROSION CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

SHEET NO. C-10.0

Sheet 17 of 29

COLORADO LICENSED
JOSEPH D. PAGE
42470
PROFESSIONAL ENGINEER
11/05/2021

CD 4TH SUBMITTAL	11/05/26 DATE	MOC148 PRN	JDP PM	SE DES	DMH DRW

SITE DETAILS
MURPHY USA (NTI)
9091 WESTVIEW RD
LONE TREE COLORADO

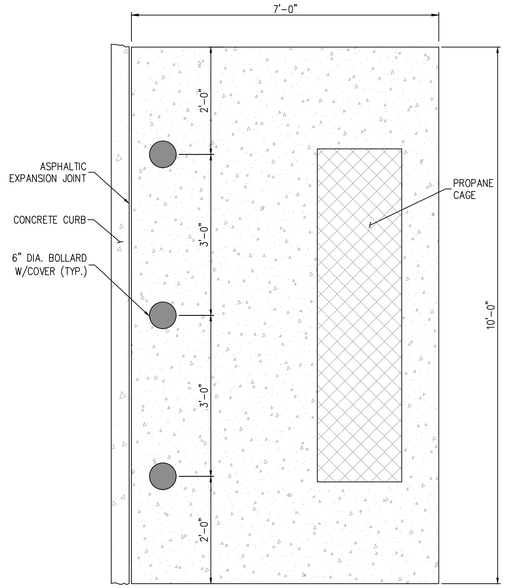
Galloway

5500 Greenwood Plaza Blvd., Suite 200
Greenwood Village, CO 80111
303.770.8884 • GallowayUS.com

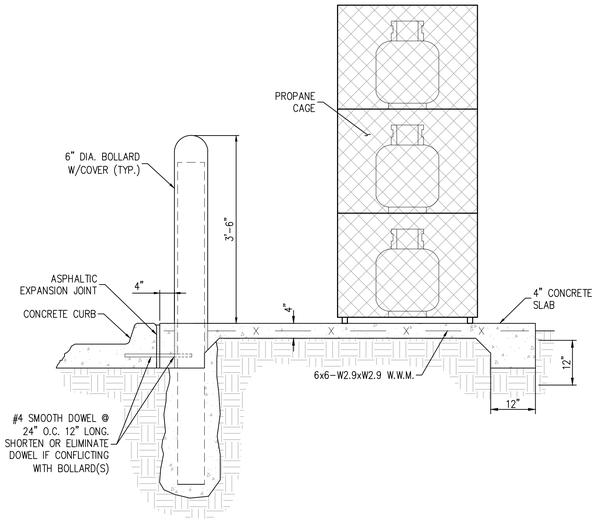
MURPHY OIL USA, INC.

MURPHY USA

200 PEACH STREET
EL DORADO, AR 71730



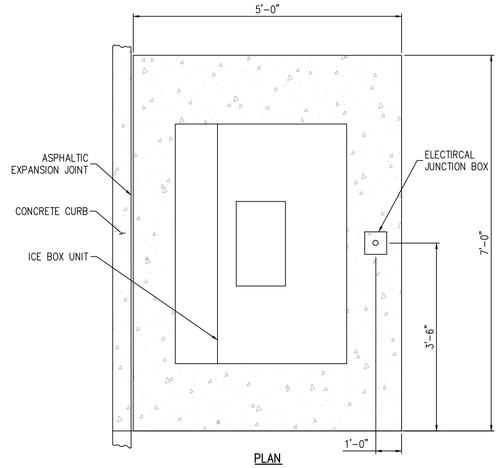
PLAN



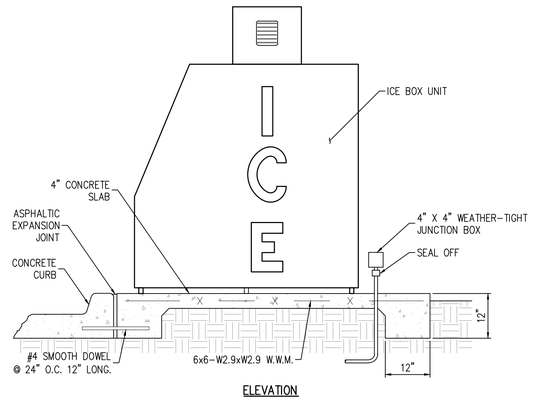
ELEVATION

NOTE:
SLOPE PAD FOR POSITIVE DRAINAGE (0.5% MIN.-1% MAX.)

PROPANE MOUNTING SLAB DETAIL
N.T.S.



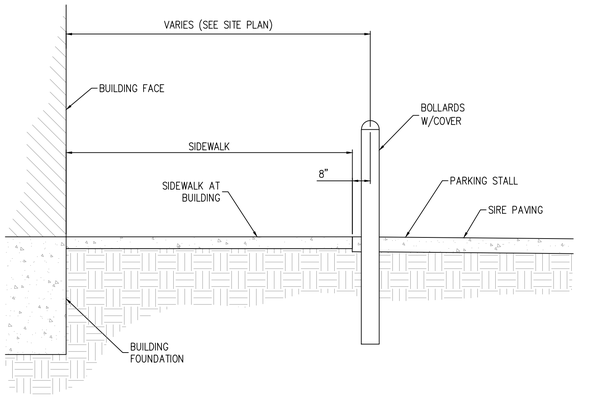
PLAN



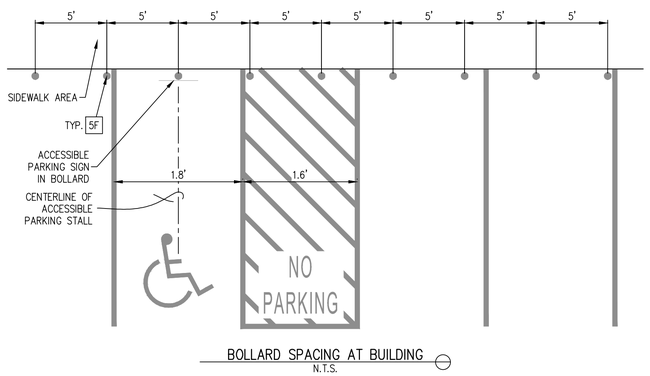
ELEVATION

NOTES:
1. SLOPE PAD FOR POSITIVE DRAINAGE (0.5% MIN.-1% MAX.)
2. SEE SITE PLAN FOR NUMBER OF ICE UNITS.

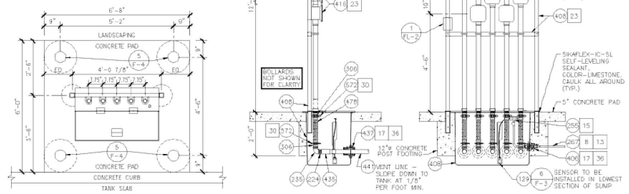
ICE BOX MOUNTING SLAB DETAIL (11)
N.T.S.



BOLLARD LOCATION AT BUILDING (20H)
N.T.S.

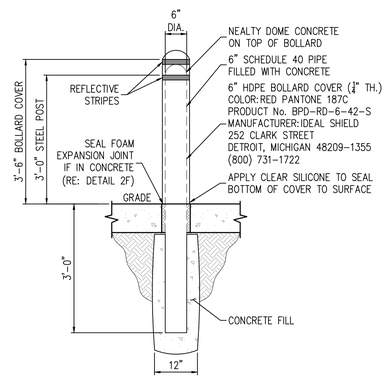


BOLLARD SPACING AT BUILDING (5D)
N.T.S.



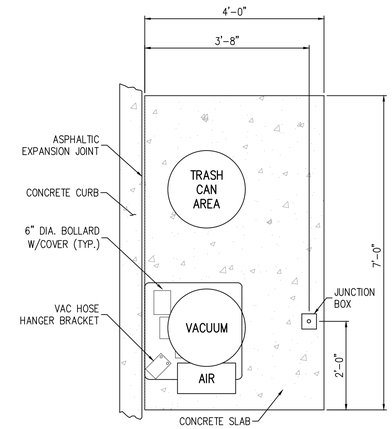
PLAN | SIDE ELEVATION | FRONT ELEVATION

VENT RISER DETAIL (12F)
NTS

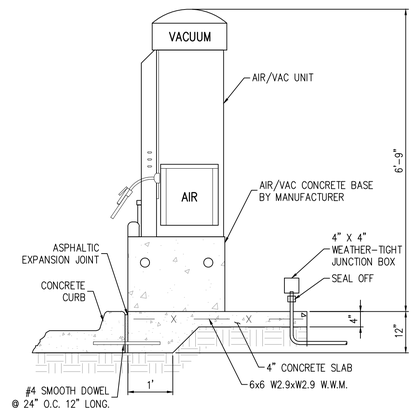


NOTE:
1. COVER SHALL BE SECURED TO POST WITH NEOPRENE ADHESIVE TAPE PER MANUFACTURER'S RECOMMENDATIONS.

STEEL BOLLARD WITH COVER (5F)
N.T.S.



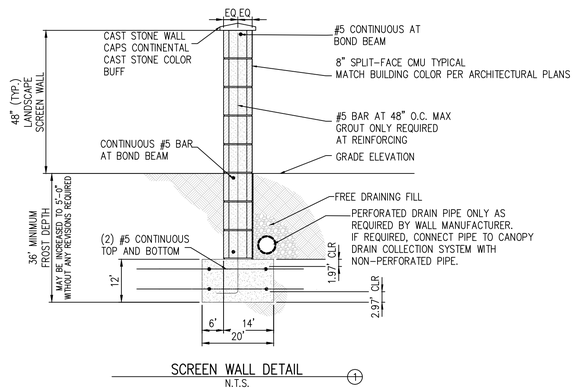
PLAN



ELEVATION

NOTE:
SLOPE PAD FOR POSITIVE DRAINAGE (0.5% MIN.-1% MAX.).

AIR/VAC MOUNTING SLAB DETAIL (21)
N.T.S.



SCREEN WALL DETAIL (1)
N.T.S.

CITY OF LONE TREE

DATE

THE CONSTRUCTION PLANS HAVE BEEN REVIEWED BY THE CITY OF LONE TREE FOR SITE IMPROVEMENTS, STORM SEWER, GRADING AND EROSION CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

SHEET NO. C-12.0
Sheet 18 of 29

COLORADO LICENSED
JOSEPH D. PAGE
42470
PROFESSIONAL ENGINEER
STATE OF COLORADO

CD 4TH SUBMITTAL	11/05/26	MOC148	JDP	SE	DMH
	DATE	PRN	PM	DES	DRW

SITE DETAILS
MURPHY USA (NTI)
9091 WESTVIEW RD
LONE TREE COLORADO

Galloway
5500 Greenwood Plaza Blvd., Suite 200
Greenwood Village, CO 80111
303.770.8884 • GallowayUS.com

MURPHY OIL USA, INC.
MURPHY USA
200 PEACH STREET
EL DORADO, AR 71730

CONCRETE SPECIFICATIONS

CEMENT
1. PROVIDE AN APPROVED STANDARD BRAND PORTLAND CEMENT CONFORMING TO ASTM C 150.

2. PROVIDE TYPE I NORMAL STRENGTH OR TYPE III HIGH EARLY STRENGTH.

AIR ENTRAINMENT
1. PROVIDE AN APPROVED STANDARD BRAND TYPE A ADMIXTURE CONFORMING TO ASTM C 494.

2. PROVIDE AIR ENTRAINED CONCRETE FOR ALL EXPOSED CONCRETE TO BE FINISHED INCLUDING FOUNDATIONS, WALKS, PAVEMENTS, AND RETAINING WALLS.
   A. AIR ENTRAINED IS TO BE A MINIMUM OF FIVE PERCENT (5%) AND MAXIMUM OF SEVEN PERCENT (7%) BY VOLUME. EVALUATE CONCRETE TEMPERATURE TO DETERMINE DOSAGE OF AIR ENTRAINING ADMIXTURE

3. MEASURE THE AIR CONTENT AT THE POINT OF DISCHARGE INTO FORMS OR AT TRUCK.

FINE AGGREGATE
1. PROVIDE FINE AGGREGATES CONFORMING TO ASTM C 33 CONSISTING OF NATURAL SAND HAVING CLEAN, HARD, STRONG, DURABLE, UNCOATED GRAINS, FREE OF INJURIOUS AMOUNTS OF DUST, LUMPS, SOFT OR FLAKY PARTICLES, SHALE, ALKALI, ORGANIC MATTER, OR OTHER DELETERIOUS SUBSTANCES.

2. FINE AGGREGATES RANGE PASSING THROUGH A NO. 100 SIEVE (0% TO 7%).

3. IN ADDITION NOT MORE THAN 45 PERCENT IS TO BE RETAINED BETWEEN ANY TWO CONSECUTIVE SIEVES.

COARSE AGGREGATES
1. PROVIDE COARSE AGGREGATES CONFORMING TO ASTM C 33 CONSISTING OF CRUSHED STONE OR WASHED GRAVEL HAVING A CLEAN, HARD, STRONG, DURABLE, UNCOATED, PARTICLE FREE FROM INJURIOUS AMOUNTS OF SOFT OR FLAKY PIECES, ALKALI, ORGANIC MATTER, OR OTHER DELETERIOUS SUBSTANCES.

2. PROVIDE COARSE AGGREGATE WITH A MAXIMUM OF 1–1/2 INCHES, WITH A MINIMUM OF 95 PERCENT PASSING A 1–1/2 INCH SIEVE.

3. NOT MORE THAN TEN PERCENT (10%) IS TO PASS A NO. 4 SIEVE.

WATER
1. USE CLEAN WATER FREE OF INJURIOUS AMOUNTS OF OILS, ACIDS, ALKALI, SILTS, ORGANIC MATERIALS, OR OTHER SUBSTANCES THAT MAY BE DELETERIOUS TO CONCRETE OR STEEL.

CONCRETE MIX DESIGN
1. REQUIRE BATCH TICKETS TO BE FURNISHED UPON DELIVERY OF THE CONCRETE TO ENSURE CONCRETE MEETS THE SPECIFICATION. CONTRACTOR TO PROVIDE PLANT BATCH CERTIFICATIONS TO OWNER'S FIELD REPRESENTATIVE.

2. PROVIDE CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS (3,000 PSI FOR FOOTINGS/RETAINING WALLS) WITH A MINIMUM OF SIX BAGS (564 LBS.) OF CEMENT IN EACH CUBIC YARD OF CONCRETE CONFORMING TO ASTM C 94.

3. DO NOT EXCEED THE MAXIMUM WATER CEMENT RATIO OF 0.53.

4. PROVIDE CONCRETE WITH A FOUR INCH DESIGN SLUMP WHEN TESTED WITH A STANDARD SLUMP CONE CONFORMING TO ASTM C 143. SLUMP SHALL BE 3"–5".
   A. IF CONCRETE DEVELOPS CONSISTENCY OF DIFFICULT WORKABILITY, THEN A SUPER PLASTICIZER ADMIXTURE MAY BE USED WHEN APPROVED BY OWNER.
   B. DO NOT ADD WATER TO INCREASE SLUMP/EXCEED WATER CEMENT RATIO.

5. CALCIUM CHLORIDE SHALL NOT BE USED.

6. FLY ASH SHALL NOT EXCEED CEMENT QUANTITY BY MORE THAN 15% BY WEIGHT.

PLACING CONCRETE
1. MIX AND PLACE CONCRETE FOLLOWING ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE".

2. SCHEDULE POUR THAT ONCE STARTED REMAINS A CONTINUOUS OPERATION UNTIL THE PARTICULAR SECTION OR PANEL HAS BEEN COMPLETED.

3. PROVIDE CONSTRUCTION JOINT TYPE/LOCATION AS INDICATED ON PAVING PLAN.

4. DEPOSIT CONCRETE INTO THE FINAL POSITION AT THE SPECIFIED SLUMPS WITHOUT SEGREGATION BY RE–HANDLING OR FLOWING.
   A. DEPOSIT CONCRETE AT A RATE THAT CONCRETE REMAINS PLASTIC AND FLOWABLE INTO THE SPACES BETWEEN THE REINFORCING BARS.
   B. DO NOT DEPOSIT FRESH CONCRETE ON CONCRETE THAT HAS HARDENED SUFFICIENTLY TO CAUSE FORMATION OF SEAMS OR PLANES OF WEAKNESS WITHIN THE SECTION OR PANEL.
   C. DO NOT DEPOSIT PARTIALLY HARDENED CONCRETE OR CONCRETE THAT HAS BEEN CONTAMINATED BY FOREIGN MATERIALS.
   D. DO NOT RE–TEMPER CONCRETE.

5. **THOROUGHLY SCREED AND COMPACT CONCRETE BY MEANS OF MECHANICAL VIBRATORY POWER SCREED**
   SUPERVISED BY EXPERIENCED PERSONNEL ON ALL FLATWORK.
   A. PROVIDE SUFFICIENT VIBRATION INTENSITY TO CAUSE FLOW OR SETTLEMENT AROUND REINFORCEMENT, EMBEDDED ITEMS, AND CORNERS OF THE FORMS: BUT NOT LONG ENOUGH TO CAUSE SEGREGATION OF THE MIX.
   B. SUPPLEMENT MECHANICAL VIBRATION BY HAND SPADING IN CORNERS AND ANGLES OF THE FORMS AND ALONG FORM SURFACES WHILE THE CONCRETE IS PLASTIC TO ENSURE EVEN DENSE SURFACES FREE FROM AGGREGATE POCKETS OR HONEYCOMBS.

6. PROTECT CONCRETE FROM EXCESSIVE HEAT AND PREMATURE DRYING BY THE USE OF KRAFT PAPER AND WATER MIST WHEN SITE CONDITIONS DEMAND.

7. COAT CONCRETE IMMEDIATELY AFTER FINISHING IS COMPLETE USING THE SPECIFIED CURATIVE AGENTS NO LONGER THAN 30 MINUTES FOLLOWING FINISHING IF EVAPORATION IS OCCURING.
   A. CURING COMPOUND SHALL BE SAFECURE 1000 (WHITE PIGMENTED) BY CHEMASTERS APPLIED PER MANUFACTURER'S SPECIFICATIONS.

8. IF SAW CUTTING IS EMPLOYED, IT MUST OCCUR WITHIN 6 HOURS AFTER INITIAL SET.
   A. SPALLING DUE TO SAW CUTTING ACTIONS MAY RESULT IN REJECTION OF THE CONCRETE WORK.

9. PROTECT CONCRETE AREA STRUCTURALLY FROM WINDY CONDITIONS UNTIL PROPERLY CURED.

10. FINISH SHALL BE LIGHT BROOM.

FINISH
1. PAVEMENT SURFACE SHALL BE FINISHED BY EITHER MACHINE OR HAND SUITABLE FOR ACCEPTANCE BY OWNER. HAND FINISH SHALL ONLY BE ALLOWED FOR IRREGULAR DIMENSION AREAS WHERE MECHANICAL EQUIPMENT IS IMPRACTICAL OR IN CASE OF EQUIPMENT BREAKDOWN AFTER CONCRETE IS PLACED. TAKE CARE NOT TO "HARD" TROWEL OR OVER DENSIFY PAVEMENT (NO MORE THAN 2 PASSES).

2. AFTER STRIKING OFF AND CONSOLIDATING CONCRETE, SMOOTH SURFACE BY MECHANICAL SCREEDING AND FLOATING TO MINIMIZE OR ELIMINATE HAND FINISHING.

CONCRETE SPECIFICATIONS (CONT.)

FINISH (CONT.)
2. (CONT.) ADJUST FLOATING TO COMPACT SURFACE AND PRODUCE UNIFORM TEXTURE. AFTER FLOATING, TEST SURFACE FOR TRUENESS WITH 10'–0" STRAIGHTEDGE. DISTRIBUTE CONCRETE AS REQUIRED TO REMOVE SURFACE IRREGULARITIES AND REFLOAT REPAIRED AREAS TO PROVIDE CONTINUOUS SMOOTH FINISH WITH MECHANICAL TROWEL.

3. WORK EDGES OF SLABS AND FORMED JOINTS WITH EDGING TOOL, ROUNDING EDGE TO 1/2–INCH RADIUS. ELIMINATE TOOL MARKS ON CONCRETE SURFACE. AFTER COMPLETION OF FLOATING AND TROWELLING, WHEN EXCESS MOISTURE OR SURFACE SHEEN HAS DISAPPEARED, COMPLETE SURFACE FINISHING, AS FOLLOWS:
   A. INCLINED SLAB SURFACES: PROVIDE COARSE, NONSLIP FINISH BY SCORING SURFACE WITH STIFF–BRISTLED BROOM PERPENDICULAR TO FLOW OF TRAFFIC SO AS TO PRODUCE REGULAR CORRUGATIONS NOT OVER 1/16 OF AN INCH DEEP.
   B. PAVING: PROVIDE COARSE, NONSLIP FINISH BY SCORING SURFACE WITH STIFF–BRISTLED BROOM PERPENDICULAR TO FLOW OF TRAFFIC SO AS TO PRODUCE REGULAR CORRUGATIONS NOT OVER 1/16 OF AN INCH DEEP.
   C. TINE FINISH: MAY BE UTILIZED AT EACH OF THE ENTRANCE DRIVES (SLOPE > 3%) AT THE OWNER'S DISCRETION AND SHALL PROVIDE FOR A 3/8 INCH MINIMUM SPACING AND 1 ½ INCH MAXIMUM SPACING. GROOVES PRODUCED IN CONCRETE SHALL BE 3/16 INCH IN DEPTH WITH A MINIMUM DEPTH OF 1/8 INCH.

4. DO NOT REMOVE FORMS FOR 24 HOURS AFTER CONCRETE HAS BEEN PLACED. AFTER FORM REMOVAL, CLEAN ENDS OF JOINTS, BACK OF CURBS AND POINT UP MINOR HONEYCOMBED AREAS. REMOVE AND REPLACE AREAS OR SECTIONS WITH MAJOR DEFECTS, AS DIRECTED BY OWNER.

5. SWEEP CONCRETE PAVEMENT AND WASH FREE OF STAINS, DISCOLORATIONS, DIRT AND OTHER FOREIGN MATERIAL PRIOR TO FINAL INSPECTION.

6. PROTECT CONCRETE FROM DAMAGE UNTIL ACCEPTANCE OF WORK. EXCLUDE TRAFFIC FROM PAVEMENT FOR AT LEAST 14 DAYS AFTER PLACEMENT OR UNTIL 75% OF SPECIFIED STRENGTH IS ACHIEVED.

COLD WEATHER REQUIREMENTS
1. FOLLOW THE REQUIREMENTS OF ACI 306.1–90 AND THE FOLLOWING
   A. REFER TO: "RECOMMENDED PRACTICES FOR COLD WEATHER MASONRY CONSTRUCTION" AS PUBLISHED BY INTERNATIONAL MASONRY INDUSTRY ALL WEATHER COUNCIL FOR TYPICAL COLD WEATHER MASONRY PRACTICES TO BE FOLLOWED.
   B. PROVIDE ADEQUATE EQUIPMENT FOR HEATING CONCRETE MATERIALS, AND FOR PROTECTION OF THE CONCRETE DURING FREEZING OR NEAR FREEZING WEATHER.
   C. MAINTAIN CONCRETE MATERIALS, REINFORCEMENT, FORM WORK, FILLERS, AND GROUND TO BE IN CONTACT WITH THE CONCRETE FREE OF FROST. DO NOT USE FROZEN MATERIALS OR MATERIALS CONTAINING ICE.
   D. PROVIDE CONCRETE, DELIVERED IN COLD WEATHER, WITH THE FOLLOWING TEMPERATURES:

AIR TEMP.	MIN. CONCRETE TEMP.
30–40 °F	60 °F
0–30 °F	65 °F
BELOW 0 °F	70 °F

   E. WHEN PRODUCING CONCRETE WITH HEATED AGGREGATES, HEATED WATER OR BOTH, DO NOT ALLOW CONCRETE TO EXCEED 90°F DURING PRODUCTION OR TRANSPORTATION.
   F. ALL CONCRETE SLABS PLACED AT AIR TEMPERATURES FROM 20°F TO 50°F MAY HAVE AN ACCELERATING WATER REDUCING ADMIXTURE ADDITIVE ADDED TO ACCELERATE SETTING TIME AND STRENGTH ADMIXTURE COMPLYING WITH ASTM C 494, TYPE C.
      a. ACCEPTABLE ADMIXTURES AR EUCLID CHEMICAL COMPANY'S "ACCELGAURD 90", OR EQUAL PRODUCTS BY W.R. MEADOWS, INC. OR W.R. GRACE & CO.
      – ADD ACCELGUARD 80 W./ WATER & AGGREGATE TO THE READY MIX CONCRETE TRUCK, BUT DO NOT DISPENSE ONTO DRY CONCRETE.
      – FOR TEMPERATURES 32° F – 60° F, ADD AT A RATE OF 16OZ./100 LBS. OF CONCRETE.
      – FOR TEMPERATURES BELOW 32° F, HEAT AGGREGATE AND USE WARM WATER SO THAT WHEN MIXED CONCRETE TEMPERATURE WILL BE ABOVE 60°.
      b. FOLLOW THE MANUFACTURER'S INSTRUCTION FOR THE QUANTITY TO BE ADDED TO THE CONCRETE MIX, DEPENDING UPON THE AMBIENT TEMPERATURE, DESIRED RATE OF ACCELERATION, EARLY STRENGTH GAIN, AND STRIPPING SCHEDULE.
      c. MAINTAIN CONCRETE ABOVE 50°F IN A MOIST CONDITION FOR A MINIMUM OF SEVEN DAYS AFTER PLACEMENT FOLLOWING THE RECOMMENDATIONS OF ACI 308–92.

HOT WEATHER REQUIREMENTS
1. FOLLOWING THE REQUIREMENTS OF ACI 305R.

2. DURING HOT WEATHER, TAKE STEPS TO REDUCE CONCRETE TEMPERATURE AND WATER EVAPORATION BY PROPER ATTENTION TO INGREDIENTS, PRODUCTION METHODS, HANDLING, PLACING, PROTECTION, AND CURING.

3. THE PREFERRED PROTECTION IS A COVERING OF KRAFT PAPER, CONFORMING TO ASTM C 171, FOR A TWENTY FOUR HOUR PERIOD AFTER PLACEMENT – VERIFY WITH PM.

CONCRETE FORMWORK
1. PROVIDE DRESSED LUMBER OR MANUFACTURED FORMS CONFORMING TO THE SHAPE, LINES, AND DIMENSIONS OF CONCRETE STRUCTURES INDICATED ON THE DRAWINGS. FREE FROM DEFECTS AND SUFFICIENTLY TIGHT TO PREVENT LEAKAGE OF MORTAR.

2. ALL WOODEN FORMS TO BE NO LESS THAN THE SPECIFIED DEPTH OF THE SLAB TO BE POURED, AND NOT LESS THAN NOMINAL 2" X 4" SIZE.

3. STAKING FOR STRAIGHT SECTIONS SHALL OCCUR NOT LESS FREQUENTLY THAN EVERY FOUR FEET AND SHALL BE BOTH INSIDE AND OUTSIDE OF THE FORM.

4. FOR CURVES, STAKING SHALL OCCUR NOT LESS THAN EVERY FOOT, AND SHALL BE BOTH INSIDE AND OUTSIDE OF THE FORM.

5. STEEL FORMS SHALL BE STAKED ACCORDING TO THEIR DESIGN REQUIREMENTS.

6. ALL REMOVABLE FORMS SHALL BE COATED WITH FORM – RELEASE OIL PRIOR TO PLACEMENT OF CONCRETE.

7. CYLINDRICAL FORMS SHALL BE OF NEW SONOTUBE OR EQUIVALENT DISPOSABLE MATERIALS.
   A. THESE MATERIALS MUST BE REMOVED COMPLETELY AFTER USE. ISLAND FORMS SHALL BE POSITIONED USING MASONRY BLOCKING AND STEEL STAKES BOTH INSIDE AND OUTSIDE OF THE FORM, TO ACHIEVE AN AVERAGE AS PER REVEAL HEIGHT AS MEASURED AT THE CENTER OF ANY LONG SIDE OF THE ISLAND.

8. THE SIDES OF THE ISLAND FORM SHALL BE SHIMMED AGAINST THE STAKES TO PROVIDE A PERFECTLY PLUMB FREEBOARD.

9. ALL EDGES CREATED BY REMOVABLE FORMS SHALL BE TOOL–RADIUSED AFTER SURFACE FINISHING TO PROVIDE A SMOOTH BORDER ON ALL SLABS.

10. FORMS SHALL BE REMOVED NO SOONER THAN 24 HOURS FROM THE TIME OF THE POUR.

11. PROPERLY BRACE OR TIE FORMS TOGETHER TO MAINTAIN SHAPE AND POSITION.

12. PROVIDE SQUARE EDGE WOOD OR, IF AVAILABLE, METAL FORMS FOR FLOOR SLABS.

13. BEFORE POURING CONCRETE, REMOVE ALL DEBRIS FROM THE FORMWORK.

14. WET DOWN FORMWORK PRIOR TO PLACEMENT, OR APPLY A FORM RELEASE AGENT FOLLOWING MANUFACTURER'S RECOMMENDATIONS.

CONCRETE SPECIFICATIONS (CONT.)

CONCRETE FORMWORK (CONT.)
15. DO NOT REMOVE FORMWORK AND BRACING UNTIL CONCRETE HAS GAINED SUFFICIENT STRENGTH TO CARRY ITS OWN WEIGHT, CONSTRUCTION LOADS, AND DESIGN LOADS WHICH ARE LIABLE TO BE IMPOSED ON IT.

16. REMOVE FORMS IN A MANNER TO ASSURE THE COMPLETE SAFETY OF THE STRUCTURE.

17. DO NOT PLACE ANY CONCRETE IF THE SUBGRADE HAS STANDING WATER OR IS MUDDY.

STEEL REINFORCEMENT
1. PROVIDE REINFORCING BARS CONFORMING TO ASTM A 615, GRADE 60 FREE OF LOOSE FLAKY RUST, MUD, OIL, OR OTHER COATINGS WHICH WILL ADVERSELY AFFECT BONDING CAPACITY.

2. PLACE REINFORCEMENT ACCURATELY AND ADEQUATELY SUPPORTED BY CONCRETE MASONRY UNITS OR OTHER APPROVED SPACERS.

3. SECURE REINFORCEMENT AGAINST DISPLACEMENT WITHIN TOLERANCES SPECIFIED IN "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318).

4. HOLD BARS IN PLACE USING A MINIMUM 18 GAUGE ANNEALED IRON WIRE.

5. SPLICES IN DEFORMED REINFORCING BARS WILL NOT BE PERMITTED UNLESS APPROVED BY OWNER.

6. REINFORCING ROD TO COMPLY WITH ASTM 615, GRADE 60.

FOUNDATIONS
1. PROVIDE SMOOTH FINISH AT ALL EXPOSED SURFACES.

2. CONSTRUCT CORNERS WITH A ONE INCH CHAMFER.

3. INCREASE THE DEPTH OF FOUNDATIONS, IF REQUIRED BY FROST LINE CONDITIONS OR BY LOCAL CODES.

4. OBTAIN OWNER APPROVAL OF ADDITIONAL DEPTH REQUIREMENTS BEFORE PLACING CONCRETE.

5. CONSTRUCT TOP ELEVATION OF FOUNDATIONS TO WITHIN +1/4 INCH OF THE ELEVATION INDICATED ON THE DRAWINGS.

6. INSTALL ANCHOR BOLTS WITH A HORIZONTAL TOLERANCE OF +1/8 INCH AND A VERTICAL ALIGNMENT OF +1/8 INCH OUT OF PLUMB.

GROUT
1. PROVIDE NON–METALLIC, NON–SHRINK, PREMIXED NON–STAINING GROUT CONTAINING SELECTED SILICA SANDS, ASTM C 150 TYPE I PORTLAND CEMENT, AND SHRINKAGE COMPENSATING AGENTS.

2. ACCEPTABLE PRODUCTS ARE "EMBECO" BY MASTER BUILDERS AND "FIVE STAR GROUT" BY U.S. GROUT CORPORATION.

FIELD QUALITY CONTROL
1. TESTING: OWNER WILL ENGAGE A QUALIFIED TESTING/INSPECTION AGENCY TO PERFORM FIELD TESTS AND INSPECTIONS AND PREPARE TESTING AND INSPECTION REPORTS.

2. TESTING AGENCY:
   A. TESTING AGENCY SHALL IMMEDIATELY REPORT TO OWNER ANY FAILURE OF WORK TO COMPLY WITH CONTRACT DOCUMENTS.
   B. TESTING AGENCY SHALL REPORT RESULTS OF TESTS AND INSPECTIONS, IN WRITING, TO OWNER.
      a. TEST REPORTS SHALL INCLUDE REPORTING REQUIREMENTS OF ASTM C31, ASTM C39, AND ACI 301, INCLUDING THE FOLLOWING AS APPLICABLE TO EACH TEST AND INSPECTION:
      – PROJECT NAME
      – NAME OF TESTING AGENCY
      – NAMES AND CERTIFICATION NUMBERS OF FIELD AND LABORATORY TECHNICIANS PERFORMING INSPECTIONS AND TESTING
      – NAME OF CONCRETE MANUFACTURER
      – DATE AND TIME OF INSPECTION, SAMPLING, AND FIELD TESTING
      – LOCATION IN WORK OF CONCRETE REPRESENTED BY SAMPLES
      – DATE AND TIME SAMPLE WAS OBTAINED
      – TRUCK AND BATCH TICKET NUMBERS
      – DESIGN COMPRESSIVE STRENGTH AT 28 DAYS
      – CONCRETE MIXTURE DESIGNATION
      – FIELD TEST RESULTS
      – TYPE OF FRACTURE AND COMPRESSIVE BREAK STRENGTHS AT SEVEN DAYS AND 28 DAYS.

3. CONCRETE TESTS: TESTING OF COMPOSITE SAMPLES OF FRESH CONCRETE OBTAINED IN ACCORDANCE WITH ASTM C 172 SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:
   A. TESTING FREQUENCY: OBTAIN ONE COMPOSITE SAMPLE OF EACH CONCRETE MIXTURE NOT LESS THAN ONCE A DAY, NOR LESS THAN ONCE FOR EACH 100 CUBIC YARD OR FRACTION THEREOF FOR SLABS, PAVEMENTS, AND WALLS, AND NOT LESS THAN ONCE FOR EACH 50 CUBIC YARDS OR FRACTION THEREOF FOR FOUNDATIONS.

4. SLUMP: ASTM C143
   A. ONE TEST AT POINT OF PLACEMENT FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIXTURE.
   B. PERFORM ADDITIONAL TESTS WHEN CONCRETE CONSISTENCY APPEARS TO CHANGE.

5. AIR CONTENT: ASTM C231
   A. ONE TEST FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIXTURE.

6. CONCRETE TEMPERATURE: ASTM C1064
   A. ONE TEST HOURLY WHEN AIR TEMPERATURE IS 40 DEG F AND BELOW OR 80 DEG F AND ABOVE, AND ONE TEST FOR EACH COMPOSITE SAMPLE.

7. CURING COMPOUND
   A. VERIFY THAT SPECIFIED CURING COMPOUND IS BEING USED.
   B. VISUALLY VERIFY THAT THE SPECIFIED CURING COMPOUND WAS APPLIED.

8. COMPRESSION TEST SPECIMENS: ASTM C31
   A. CAST AND LABORATORY CURE ONE SET OF FOUR 6–INCH BY 12–INCH OR FIVE 4–INCH BY 8–INCH CYLINDER SPECIMENS FOR EACH COMPOSITE SAMPLE.

9. COMPRESSIVE–STRENGTH TESTS: ASTM C39
   A. TEST ONE LABORATORY SPECIMEN AT SEVEN DAYS FOR INFORMATION, ONE SET OF TWO 6–INCH BY 12–INCH OR THREE 4–INCH BY 8–INCH SPECIMENS AT 28 DAYS AND HOLD ONE CYLINDER IN RESERVE.
   B. A COMPRESSIVE–STRENGTH TEST SHALL BE THE AVERAGE COMPRESSIVE STRENGTH FROM THE SET OF SPECIMENS OBTAINED FROM SAME COMPOSITE SAMPLE AND TESTED AT 28 DAYS.

10. FIELD VERIFY REINFORCING PLACEMENT, FORMWORK, GREENSTREAK LOCATIONS, AND EXPANSION MATERIAL. THESE ARE VISUAL INSPECTIONS PERFORMED PREPOUR.

11. SOIL TESTS SHALL RECEIVE PASSING GRADE PRIOR TO CONCRETE PLACEMENT.

CITY OF LONE TREE

DATE

THE CONSTRUCTION PLANS HAVE BEEN REVIEWED BY THE CITY OF LONE TREE FOR SITE IMPROVEMENTS, STORM SEWER, GRADING AND EROSION CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

SHEET NO. C-13.0 Sheet 19 of 29

COLORADO LICENSED JOSEPH D. PAGE 42470 PROFESSIONAL ENGINEER 11/05/26

CD 4TH SUBMITTAL	11/05/26	MOC148	JDP	SE	DMH
	DATE	PRN	PM	DES	DRW

CONCRETE SPECIFICATIONS
MURPHY USA (NTI)
9091 WESTVIEW RD
LONE TREE COLORADO

Galloway
5500 Greenwood Plaza Blvd. Suite 200
Greenwood Village, CO 80111
303.770.8884 • GallowayUS.com

MURPHY OIL USA, INC.
200 PEACH STREET
EL DORADO, AR 71730

EARTHWORK SPECIFICATIONS

GENERAL

1. REFERENCED PUBLICATIONS: THE FOLLOWNG PUBLICATIONS ARE INCLUDED AS PART OF THESE EARTHWORK SPECIFICATIONS:
   A. ASTM C 136 – METHOD FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES.
   B. ASTM D 698 – TEST METHODS FOR MOISTURE–DENSITY RELATIONS OF SOIL AND SOIL–AGGREGATE MIXTURES, USING 5.5–LB (2.49 KG) RAMMER AND 12 INCH (305 MM) DROP.
   C. ASTM D 1556 – TEST METHOD FOR DENSITY OF SOIL IN PLACE BY THE SAND–CONE METHOD.
   D. ASTM D 4254 – TEST METHODS FOR MINIMUM INDEX DENSITY OF SOILS AND CALCULATION OF RELATIVE DENSITY.
   E. ASTM D 1557 – TEST METHOD FOR MOISTURE–DENSITY ELEVATIONS OF SOILS AND SOIL–AGGREGATE MIXTURE USING 10 POUND (4.54 KG) RAMMER AND 18–IN. (457 MM) DROP.
   F. ASTM D 2167 – TEST METHOD FOR DENSITY AND UNIT WEIGHT OF SOIL IN PLACE BY THE RUBBER BALLOON METHOD.
   G. ASTM D 4253/ D4254 – STANDARD METHOD OF TEST FOR RELATIVE DENSITY OF COHESIONLESS SOILS.

2. CARE SHALL BE USED WHEN OPERATING MECHANICAL EQUIPMENT IN LOCATIONS WHERE IT MAY CAUSE DAMAGE TO TREES, BUILDINGS, CULVERTS, OR OTHER EXISTING PROPERTY, UTILITIES, OR STRUCTURES ABOVE OR BELOW GROUND.

3. PROVIDE SHORING, BARRIERS, LIGHTING, WARNING SIGNS, AND RAILINGS AS REQUIRED BY LAW OR REGULATIONS FOR THE PROTECTION OF EMPLOYEES, THE PUBLIC, AND ADJACENT PROPERTY.

4. PROPERLY BARRICADE AND PROTECT AND MAINTAIN ANY OPEN TRENCH OR EXCAVATION TO PREVENT ACCIDENTAL OR UNAUTHORIZED ENTRANCE.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING UNDERGROUND PLUMBING, DRAINAGE, OR ELECTRICAL UTILITY LINES.
   A. WHERE CERTAIN ON–SITE UTILITIES ARE INDICATED TO REMAIN, PROTECT AND MAINTAIN SUCH LINE, AND BE RESPONSIBLE FOR ALL DAMAGE UNTIL COMPLETION OF WORK.
   B. COOPERATE WITH UTILITY COMPANIES TO MAINTAIN EXISTING UTILITY LINES IN CONTINUOUS OPERATION.
   C. WHERE UNMARKED UTILITIES ARE UNCOVERED WITHIN THE WORK AREA, NOTIFY MURPHY OIL USA, INC. AND THE UTILITIES HAVING JURISDICTION, AND TAKE PRECAUTIONS TO PREVENT INTERRUPTION OF SERVICE.
      a. SHOULD SUCH LINES OR SERVICES BE DAMAGED, BROKEN OR INTERRUPTED THROUGH NEGLIGENCE, REPAIR AND RESTORE IMMEDIATELY WITHOUT ADDITIONAL COST TO UTILITY OR TO MURPHY OIL USA, INC.

6. CLOSE OPEN ENDS OF ABANDONED UNDERGROUND UTILITIES WHICH ARE INDICATED TO REMAIN IN PLACE. FOLLOW PROCEDURES ESTABLISHED BY THE UTILITY COMPANY HAVING JURISDICTION.

GRADING

1. REMOVE ALL DEBRIS FROM AREAS TO BE LANDSCAPED TO A DEPTH OF TWO FEET.
   A. BACKFILL WITH CLEAN SOIL TO A DEPTH WITHIN SIX INCHES OF THE FINISHED GRADE.
   B. BACKFILL TO SIX INCHES BELOW TOP OF EXISTING CURBS. UNIFORMLY COMPACT BACKFILL AND GRADE AREAS TO INDICATED SLOPE WITH A TOLERANCE OF 1/4 INCH ABOVE OR BELOW INDICATED ELEVATIONS.

2. PROTECT NEWLY GRADED AREAS FROM TRAFFIC AND EROSION.

3. REPAIR, RE–GRADED, AND RE–COMPACT GRADES IN SETTLED, ERODED, AND RUTTED AREAS TO SPECIFIED TOLERANCES.

4. LANDSCAPING WORK INCLUDING BACKFILLING LANDSCAPED AREAS TO GRADE WITH SIX INCHES OF TOPSOIL.

EXCAVATING

1. EXCAVATION OPERATIONS SHALL BE PERFORMED IN ACCORDANCE WITH OSHA GUIDELINES AND ALL APPLICABLE STATE AND LOCAL ORDINANCES.

2. EXCAVATE SUBSOIL REQUIRED FOR FOUNDATIONS, CONSTRUCTION OPERATIONS, AND OTHER WORK.

3. EXCAVATE FOUNDATIONS TO A DEPTH INDICATED ON THE DRAWINGS OR AS DEEP AS REQUIRED TO ATTAIN PROPER SOIL BEARING PRESSURE, OR MEET GOVERNING CODES.

4. DEEPER FOUNDATIONS WILL BE APPROVED, IN WRITING, BY MURPHY OIL USA, INC.

5. MACHINE SLOPE BANKS TO ANGLE OF REPOSE OR LESS UNTIL SHORED, AS REQUIRED BY ALL CURRENT OSHA STANDARDS.

6. DO NOT ALLOW EXCAVATION TO INTERFERE WITH NORMAL 45 DEGREE BEARING SPLAY OF ANY FOUNDATION.

7. HAND TRIM EXCAVATION AND LEAVE FREE OF LOOSE MATTER.

8. EXCAVATED MATERIAL SHALL BE FIELD–SCREENED BY THE ENGINEER USING AMBIENT TEMPERATURE HEADSPACE ANALYSIS (ATHA) METHODS TO SEGREGATE POTENTIALLY CONTAMINATED SOILS FROM UNCONTAMINATED SOILS.
   A. EXCAVATED MATERIALS WITH OBSERVED PHOTO IONIZATION DETECTOR (PIP) READINGS GREATER THAN 20 PARTS PER MILLION (PPM) DURING THE SCREENING WILL BE CONSIDERED POTENTIALLY CONTAMINATED AND SHALL BE PLACED ON A BERMED, IMPERMEABLE LINER OF MINIMUM 6–MIL VISQUEEN AT A LOCATION DESIGNATED BY THE ENGINEER.
      a. THE ENGINEER WILL COORDINATE APPROVAL FOR DISPOSAL OF THE SOIL TRANSPORTATION OF CONTAMINATED SOIL TO AN APPROVED DISPOSAL SITE WILL BE PERFORMED BY THE CONTRACTOR UNDER THIS CONTRACT.
   B. THE ENGINEER MAY COLLECT SAMPLES OF EXCAVATED MATERIAL FOR FIELD OR LABORATORY ANALYSES FOR THE PURPOSE OF VERIFYING CONTAMINANT CONCENTRATIONS.
      a. THE CONTRACTOR SHALL PROVIDE SAMPLES OF EXCAVATED MATERIAL TO THE ENGINEER, AS REQUESTED.
   C. EXCAVATED MATERIAL WITH OBSERVED PIP READINGS LESS THAT 20 PPM DURING ATHA TESTING WILL BE CONSIDERED UNCONTAMINATED AND SHALL BE TEMPORARILY STOCKPILED ON SITE IN A LOCATION WHICH WILL NOT INTERFERE WITH TRAFFIC OR DAILY BUSINESS OPERATIONS.
      a. UNCONTAMINATED MATERIAL WILL NOT BE USED AS BACKFILL IF THE ENGINEER DETERMINES THAT EXCAVATED UNCONTAMINATED MATERIALS IS UNSUITABLE FOR USE AS BACKFILL.
   D. THE EXCAVATED MATERIAL WILL BE TRANSPORTED OFF SITE BY THE CONTRACTOR FOR RE–USE OR DISPOSAL.

9. REPLACE ALL UNSATISFACTORY SOIL MATERIALS WITH AN ENGINEERED FILL CONSISTING OF ORDINARY SOIL AS EXCAVATED ON THE SITE, FREE FROM DEBRIS ROOTS, STONES LARGER THAN TWO INCHES, SILT, MUCK OR PEAT CAPABLE OF BEING COMPACTED TO THE DENSITIES SPECIFIED IN BACKFILL.
   A. INSTALL FILL MATERIAL IN LAYERS NOT EXCEEDING 12 INCHES AND MOISTENED ONLY AS REQUIRED TO OBTAIN THE SPECIFIED DEGREE OF COMPACTING.

10. CORRECT UNAUTHORIZED OVER–EXCAVATION AT NO COST TO THE OWNER.

11. STOCKPILE SUFFICIENT CLEAN APPROVED SOIL MATERIALS FOR ALL BACKFILLING OR GRADING WORK.
   A. STOCKPILE EXCAVATED MATERIAL IN AREA DESIGNATED ON–SITE OR WHERE DIRECTED AND REMOVE EXCESS SUBSOIL, NOT BEING REUSED, FROM SITE.
   B. DO NOT USE UNTREATED OR STABILIZED TOPSOIL AS COMPACTED SUB–GRADE MATERIAL UNDER PAVING OR FOUNDATION STRUCTURES UNLESS SPECIFICALLY

EARTHWORK SPECIFICATIONS (CONT.)

EXCAVATION (CONT.)

B. (CONT.) APPROVED BY MURPHY OIL USA, INC.

12. IN THE EVENT THAT SOLID ROCK OR OTHER UNEXPECTED MATERIALS OVER ONE CUBIC YARD IN VOLUME ARE ENCOUNTERED, EXTRA COST WILL BE ALLOWED AFTER WRITTEN APPROVAL BY MURPHY OIL USA, INC. EXTRA COST WILL FOLLOW UNIT PRICES QUOTED IN THE CONTRACTOR'S BID, WITH QUANTITIES TO BE APPROVED BY MURPHY OIL USA, INC.

13. FILL OVER–EXCAVATED AREAS UNDER STRUCTURE BEARING SURFACES BY EXTENDING INDICATED BOTTOM ELEVATION OF FOOTING OR BASE TO EXCAVATION BOTTOM WITHOUT CHANGING TOP ELEVATION OR BY FILLING UNAUTHORIZED EXCAVATION WITH 3000 PSI CONCRETE.

14. TRENCHING
   A. COMPLY WITH OSHA AND OTHER LOCAL REGULATIONS FOR TRENCHING REQUIREMENTS.
   B. CONFORM EXCAVATIONS FOR PIPING TO LIMITS, DEPTHS, AND MATERIALS INDICATED ON THE DRAWINGS, AND TO APPLICABLE CODES AND REGULATIONS.
   C. MECHANICAL EQUIPMENT SHALL BE DESIGNED AND OPERATED IN SUCH A MANNER THAT THE BOTTOM ELEVATION OF THE TRENCH CAN BE CONTROLLED WITH UNIFORM TRENCH WIDTHS AND VERTICAL SIDEWALLS WHICH EXTEND FROM THE BOTTOM OF THE TRENCH TO AN ELEVATION 1 FOOT ABOVE THE TOP OF THE INSTALLED PIPE.
   D. TRENCHES SHALL BE EXCAVATED BY HAND IN LOCATION WHERE UNDERGROUND UTILITIES ARE KNOWN OR SUSPECTED.
   E. DESIGN AND PROVIDE SHEETING, SHORING, OR BRACING AT ANY OPEN TRENCH.
   F. EXCAVATE SUBSOIL REQUIRED TO INSTALL UNDERGROUND PIPING AND UTILITIES.
   G. TRENCHES SHALL BE EXCAVATED BY OPEN–CUT METHODS, EXCEPT WHEN BORING OR TUNNELING IS INDICATED ON THE DRAWINGS OR APPROVED BY THE ENGINEER.
   H. TRENCHES SHALL BE EXCAVATED TO A WIDTH NECESSARY TO PROVIDE A 1–PIPE DIAMETER MINIMUM WORKING SPACE BETWEEN THE PIPE AND THE TRENCH WALLS FOR PROPER PIPE INSTALLATION, JOINING, AND BEDDING.
   I. TRENCH WIDTH SHALL BE MAINTAINED TO WITHIN THREE (3) INCHES OF THAT SPECIFIED ON PLANS.
      a. TRENCH ALIGNMENT SHALL BE SUFFICIENTLY ACCURATE TO PERMIT PIPE TO BE ALIGNED PROPERLY WITH A 6–INCH MINIMUM CLEARANCE BETWEEN THE PIPE AND THE SIDEWALLS OF THE TRENCH.
      – THE TRENCH SIDEWALL SHALL NOT BE UNDERCUT IN ORDER TO OBTAIN CLEARANCE.
   J. CONTRACTOR SHALL OVER–EXCAVATE A MINIMUM OF SIX (6) INCHES BELOW THE BOTTOM OF THE PIPE WHEREVER THE TRENCH BOTTOM IS CONSIDERED TO BE BEDROCK OR OTHER UNSUITABLE MATERIAL.
      a. OVER–EXCAVATED SHALL BE BACKFILLED AND COMPACTED WITH ACCEPTABLE STABILIZATION MATERIAL.
   K. WHERE INSTALLING PIPE OR CONDUIT, EXCAVATE OR REMOVE ROCK TO SIX INCHES BELOW THE REQUIRED ELEVATION.
      a. BACKFILL WITH CRUSHED STONE OR GRAVEL.
      b. HAND TRIM FOR BELL AND SPIGOT PIPE JOINTS.
      c. SUPPORT PIPE DURING PLACEMENT.
   L. BACKFILL SYSTEMATICALLY, AS EARLY AS POSSIBLE, TO ALLOW MAXIMUM TIME FOR NATURAL SETTLEMENT.
   M. DO NOT BACKFILL TRENCHES UNTIL TESTING THAT IS REQUIRED BY APPLICABLE CODES HAS BEEN CONDUCTED AND APPROVED.
   N. STOCKPILING EXCAVATED MATERIALS:
      a. SUITABLE MATERIAL FOR BACKFILLING SHALL BE STOCKPILED IN AN ORDERLY MANNER, AND A MINIMUM OF TWO (2) FEET FROM THE EDGE OF THE TRENCH.
      b. EXCESS EXCAVATED MATERIALS NOT SUITABLE OR NOT REQUIRED FOR BACKFILLING SHALL BE REMOVED AND DISPOSE OF OFFSITE BY THE CONTRACTOR.
      c. EXCAVATED MATERIAL SHALL NOT BE STOCKPILED AGAINST EXISTING STRUCTURES OR APPURTENANCES.
   O. PREPARATION OF TRENCH BOTTOM.
      a. TRENCH BOTTOMS SHALL BE GRADED UNIFORMLY TO PROVIDE CLEARANCE FOR EACH SECTION OF PIPE.
      b. LOOSE MATERIAL, WATER, AND FOREIGN OBJECTS SHALL BE REMOVED FROM THE TRENCH.
      c. THE CONTRACTOR SHALL PROVIDE A FIRM SUB GRADE, WHICH IS SUITABLE FOR APPLICATION OF BEDDING MATERIAL.
      d. WHEREVER UNSTABLE MATERIAL IS ENCOUNTERED IN THE BOTTOM OF THE TRENCH, SAID MATERIAL SHALL BE OVER–EXCAVATED TO A DEPTH SUITABLE FOR CONSTRUCTION OF A STABLE SUB–GRADE.
      – THE DEPTH SUITABLE FOR CONSTRUCTION OF A STABLE SUB GRADE SHALL BE DETERMINED BY THE ENGINEER.
      – THE OVER–EXCAVATION SHALL BE BACKFILLED WITH STABILIZATION MATERIAL AND COMPACTED AS REQUIRED BY THE ENGINEER.

DEWATERING

1. PREVENT SURFACE WATER AND SUBSURFACE OR GROUND WATER FROM FLOWING INTO EXCAVATIONS AND FROM FLOODING PROJECT SITE AND SURROUNDING AREA.

2. AT NO TIME WILL PERSONNEL BE ALLOWED IN THE TRENCH UNLESS SUCH ENTRY COMPLIES WITH OSHA GUIDELINES AND WITH APPLICABLE STATE AND LOCAL REGULATIONS.

3. DO NOT ALLOW WATER TO ACCUMULATE IN EXCAVATIONS.

4. ANY WATER SUSPECTED OF BEING CONTAMINATED IS TO BE BROUGHT TO THE ATTENTION OF MURPHY OIL USA, INC.

5. REMOVE WATER TO PREVENT SOIL CHANGES DETRIMENTAL TO THE STABILITY OF SUB–GRADES.

6. PROVIDE AND MAINTAIN PUMPS, WELL POINTS, SUMPS, SUCTION AND DISCHARGE LINE, AND OTHER DEWATERING SYSTEM COMPONENTS NECESSARY TO CONVEY WATER AWAY FROM EXCAVATIONS.

7. ESTABLISH AND MAINTAIN TEMPORARY DRAINAGE DITCHES AND OTHER DIVERSIONS OUTSIDE EXCAVATION LIMITS TO CONVEY RAIN WATER AND REMOVED FROM EXCAVATIONS TO COLLECTION OR RUN–OFF AREAS.

8. DO NOT USE TRENCH EXCAVATIONS AS TEMPORARY DRAINAGE DITCHES.

9. MAINTAIN WATER ON SITE, IF REQUIRED BY THE LOCAL AUTHORITY.

10. TRENCHING
   A. ALTHOUGH IT IS NOT ANTICIPATED THAT PIPING TRENCHES WILL BE EXCAVATED BELOW THE WATER TABLE, ALL TRENCHES SHOULD BE KEPT FREE FROM EXCESS GROUNDWATER DURING CONSTRUCTION.
   B. ANY WATER WHICH IS ENCOUNTERED IN THE TRENCH SHALL BE REMOVED TO THE EXTENT NECESSARY TO PROVIDE A FIRM SUB GRADE, TO PERMIT JOINTS TO BE MADE IN THE PRY, AND TO PREVENT THE ENTRANCE OF WATER INTO THE PIPELINE.
   C. SURFACE RUNOFF SHALL BE DIVERTED TO KEEP TRENCHES FREE FROM WATER, AS NECESSARY.
   D. WATER SHALL NOT BE DISCHARGED FROM A TRENCH WITHOUT THE APPROVAL OF THE ENGINEER.
   E. WATER SHALL BE PUMPED FROM THE TRENCH TO A HOLDING TANK FOR FUTURE TREATMENT, IF NECESSARY.
   F. THE CONTRACTOR SHALL TREAT THE DISCHARGED WATER TO REMOVE VOLATILE CONTAMINANTS TO CONCENTRATIONS WITHIN LIMITS PRESCRIBED BY REGULATORY AUTHORITIES PRIOR TO DISPOSAL OF THE WATER.
   G. THE CONTRACTOR MUST DISCHARGE TREATED WATER IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS AND ORDINANCES IN A MANNER WHICH PREVENTS DAMAGE TO PERSONAL PROPERTY.
   H. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 24 HOURS PRIOR TO HIS INTENT TO DISCHARGE WATER.
   I. WATER SAMPLES MAY BE COLLECTED BY THE ENGINEER TO VERIFY CONTAMINANT

EARTHWORK SPECIFICATIONS (CONT.)

DEWATERING (CONT.)

   J. CONCENTRATIONS.
   K. THE CONTRACTOR SHALL PROVIDE DISCHARGE SAMPLES TO THE ENGINEER AS REQUESTED.
   L. THE CONTRACTOR IS RESPONSIBLE FOR SECURING AND COMPLYING WITH ALL PERMITS AS REQUIRED BY "F" ABOVE.

BACKFILL

1. BEFORE COMPACTING, MOISTEN OR AERATE EACH LAYER OF BACKFILL AS REQUIRED TO OBTAIN OPTIMUM MOISTURE CONTENT TO ATTAIN REQUIRED COMPACTING DENSITY.
   A. CINDERS, ASHES, ORGANIC MATTER, RUBBISH, OR OTHER DELETERIOUS MATERIALS WILL NOT BE PERMITTED.
   B. PLACE FILL IN LAYERS NOT MORE THAN EIGHT INCHES IN LOOSE DEPTH.

2. ROLL AREAS WITH SOILS CONTAINING CLAY OR SILT (COHESIVE SOILS) UNDER PAVING AND BUILDINGS WITH A SHEEP'S FOOT ROLLER.
   A. COMPACT FILL WITH COHESIVE MATERIALS TO A DENSITY EQUAL TO 95 PERCENT OF RELATIVE DENSITY AS DETERMINED BY ASTM D 698.
   B. DETERMINE FIELD DENSITY FOR COHESIVE SOILS BY THE SAND CONE METHOD FOLLOWING ASTM D 1556.

3. ROLL AREAS WITH SOILS CONTAINING SAND AND GRAVEL (COHESION–LESS SOILS) UNDER PAVING AND BUILDINGS WITH EITHER A THREE WHEEL TEN TON VIBRATOR ROLLER OR SEVEN TON TRACTOR.
   A. COMPACT FILL WITH COHESION–LESS SOILS TO A DENSITY EQUAL TO 65 PERCENT OF RELATIVE DENSITY AS DETERMINED BY ASTM D 4254.
   B. DETERMINE FIELD DENSITY FOR COHESION–LESS SOILS BY THE RUBBER BALLOON METHOD FOLLOWING ASTM D 2167.

4. THE OWNER MAY EMPLOY AND PAY FOR AN INDEPENDENT TESTING LABORATORY TO PERFORM ANY TEST OR INSPECTION TO SHOW COMPLIANCE WITH THESE SPECIFICATIONS.

5. IF TESTS INDICATE WORK DOES NOT MEET SPECIFIED REQUIREMENTS, REMOVE WORK, REPLACE, AND RETEST WITHOUT ADDITIONAL COST TO THE OWNER.

6. BACKFILL FOR UNDERGROUND STORAGE TANKS IS SPECIFIED ON THE TANK INSTALLATION DRAWING.

7. TRENCHING
   A. BACKFILLING WITH SAND OR PEA GRAVEL TO A DEPTH OF FOUR INCHES ABOVE THE TOP OF THE CONDUIT.
      a. DO NOT USE SAND IN CONJUNCTION WITH FILTER FABRIC.
      b. VOIDS BETWEEN CONDUITS WILL NOT BE PERMITTED.
      c. CLEAN EARTH MAY BE SUBSTITUTED FOR SAND WHEN THE TRENCH CONTAINS ONLY ONE CONDUIT.
   B. COMPRESSED AIR AND POTABLE WATER PIPING
      a. LAY PIPING ON A FOUR INCH COMPACTED BEDDING OF CLEAN SAND OR PEA GRAVEL.
      b. CONTINUE SAND BACKFILL TO A DEPTH OF FOUR INCHES ABOVE THE TOP OF THE PIPE.
   C. SEWER PIPING
      a. LAY SEWER PIPING SUPPORTED CONTINUOUSLY ON A SIX INCH COMPACTEDBEDDING OF GRAVEL OR CRUSHED STONE OF WHICH 100 PERCENT WILL PASS THROUGH A 1/2 INCH SIEVE.
      b. SHAPE BEDDING FOR CLEARANCE OF ALL JOINTS AND FITTINGS, TAMPED IN PLACE, AND GRADED EVENLY TO ENSURE A UNIFORM BEARING FOR THE FULL LENGTH OF THE PIPE.
      c. DO NOT SUPPORT PIPING BY BLOCKS, PLANKS, OR MOUNDS OF BEDDING MATERIAL.
   D. BACKFILL ONLY AFTER PIPING AND APPURTENANCES HAVE BEEN INSPECTED, TESTED, AND APPROVED.
      a. PROVIDE GRANULAR BACKFILL MATERIAL FREE OF STONES LARGER THAN THREE INCHES IN DIAMETER, NON–CORROSIVE, AND NON–ORGANIC IN NATURE.
      b. DO NOT USE MATERIAL WITH CINDERS, BUILDING MATERIALS, WASTE, OR RUBBISH.
      c. DO NOT USE FROZEN OR SEMI–FROZEN BACKFILL MATERIALS.
      d. BACKFILL AROUND PIPE TO A DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE IN LAYERS.
      e. USE GRAVEL OR CRUSHED STONE OF WHICH 100 PERCENT WILL PASS THROUGH A 1/2 INCH SIEVE.
      f. INSTALL IN LAYERS NOT TO EXCEED SIX INCHES IN DEPTH.
      g. TAKE CARE NOT TO DISTURB THE PIPE OR DAMAGE ANY PIPE COATING.

CONTRACTOR SHALL REVIEW THE GEOTECHNICAL REPORT AND ALL CIVIL DOCUMENTS. THE GEOTECHNICAL REPORT AND CIVIL DOCUMENTS SUPERCEDE ANY OF THE STANDARD SPECIFICATIONS ON THIS SHEET.

CITY OF LONE TREE

DATE

THE CONSTRUCTION PLANS HAVE BEEN REVIEWED BY THE CITY OF LONE TREE FOR SITE IMPROVEMENTS, STORM SEWER, GRADING AND EROSION CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

SHEET NO. C-13.1 Sheet 20 of 29

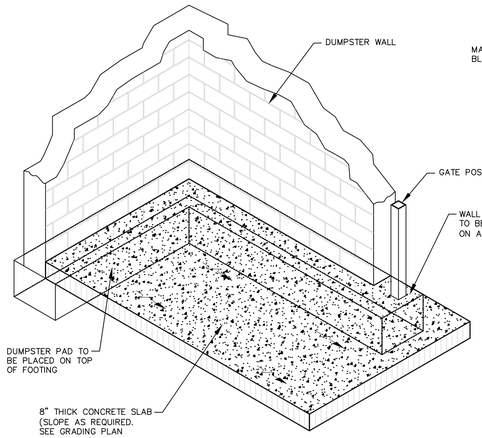
COLORADO LICENSED JOSEPH D. PAGE 42470 PROFESSIONAL ENGINEER

CD 4TH SUBMITTAL	11/05/26 DATE	MOC148 PRN	JDP PM	SE DES	DMH DRW

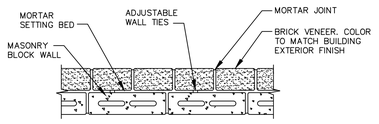
EARTHWORK SPECIFICATIONS
MURPHY USA (NTI)
9091 WESTVIEW RD
LONE TREE *COLORADO*

Galloway
5500 Greenwood Plaza Blvd., Suite 200
Greenwood Village, CO 80111
303.770.8884 • GallowayUS.com

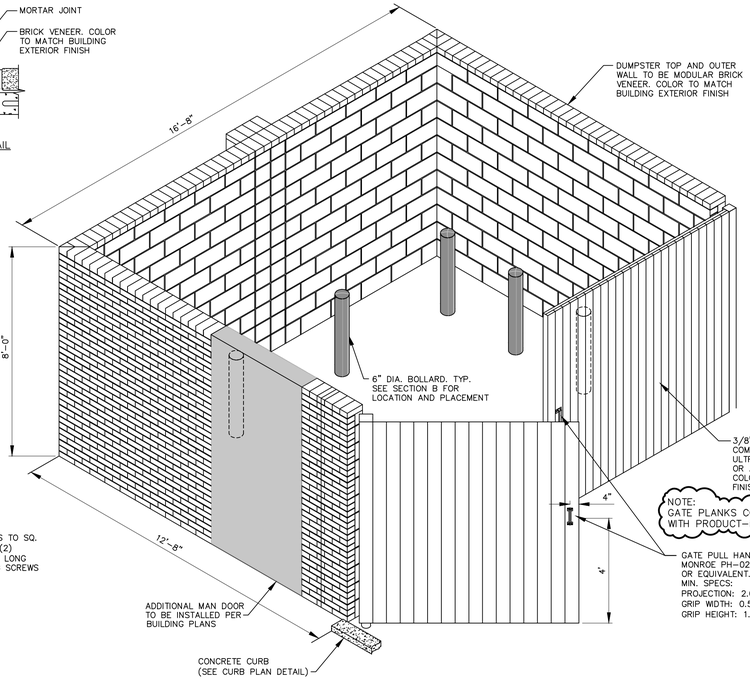
MURPHY OIL USA, INC.
200 PEACH STREET
EL DORADO, AR 71730
MURPHY USA



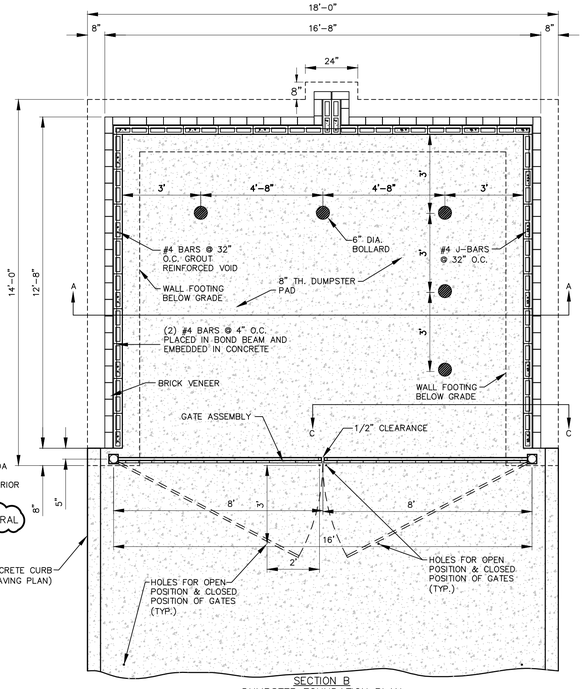
DUMPSTER PAD
N.T.S.



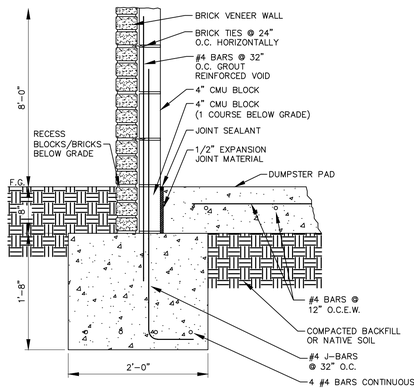
SECTION F
BRICK VENEER APPLICATION DETAIL
N.T.S.



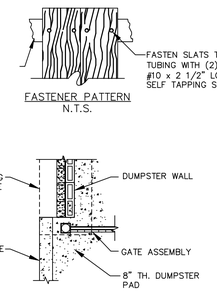
BRICK VENEER – DUMPSTER ENCLOSURE
DESIGN WIND SPEED: 130 M.P.H.



SECTION B
DUMPSTER FOUNDATION PLAN
SCALE: 3/8" = 1'–0"



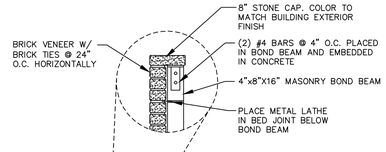
WALL FOOTING
1"=1'–0"

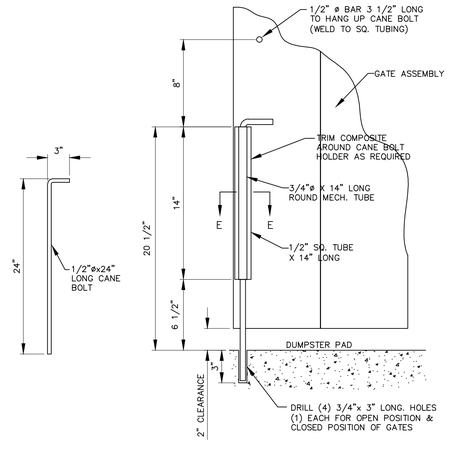


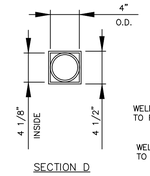
FASTENER PATTERN
N.T.S.

CURB PLAN DETAIL
N.T.S.

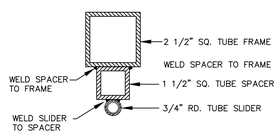
ENCLOSURE TO BE:
- 4" MASONRY BLOCK W/MODULAR BRICK VENEER.
- ENDURAMAX PRE–BLENDED MORTAR (GROUT), COLOR "GRAY"
- BRICK FINISH COLOR TO MATCH BUILDING EXTERIOR FINISH





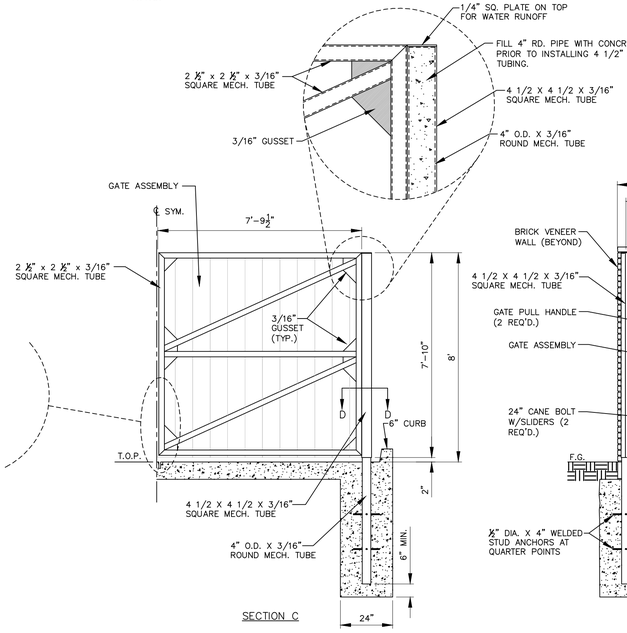


SECTION D

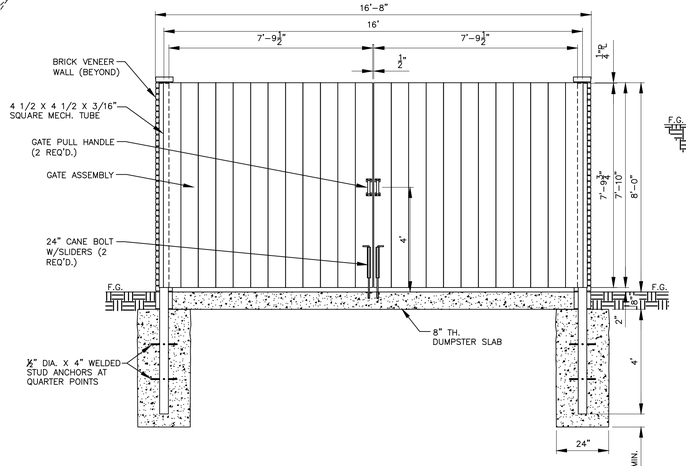


SECTION E

DUMPSTER ENCLOSURE GATE DETAIL
N.T.S.



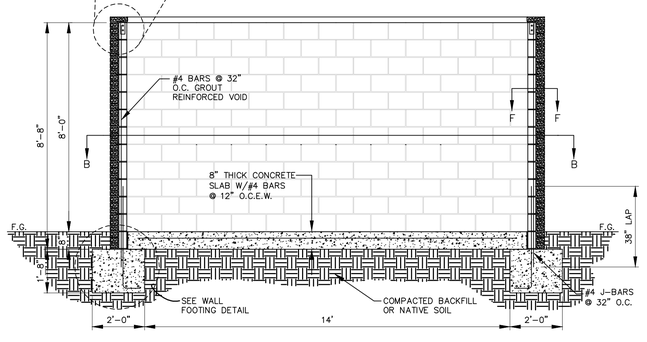
SECTION C



DUMPSTER GATE ELEVATION
SCALE: 3/8" = 1'–0"

FINISH OF FRAMING (ALL EXPOSED METAL SURFACES) – UPON PREPARATION AND CLEANING PER PAINT MANUFACTURER'S RECOMMENDATIONS, CONTRACTOR SHALL UTILIZE THE FOLLOWING COATINGS:

1. PRIMER COAT – CPS–26 ZINC CHROMATE PRIMER (3 TO 4 MILS DFT)
2. FINISH COAT – 100 SERIES INDUSTRIAL ALKYD ENAMEL W/ HARDNER ADDITIVE (3 TO 5 MILS DFT) – COLOR – BLACK



SECTION A
DUMPSTER FOUNDATION SECTION
SCALE: 3/8" = 1'–0"

BRICK FACADE DUMPSTER ENCLOSURE (COMPOSITE GATES) 2E
SCALE: 3/8" = 1'–0"

CITY OF LONE TREE

DATE

THE CONSTRUCTION PLANS HAVE BEEN REVIEWED BY THE CITY OF LONE TREE FOR SITE IMPROVEMENTS, STORM SEWER, GRADING AND EROSION CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

SHEET NO. C-14.0
Sheet 21 of 29

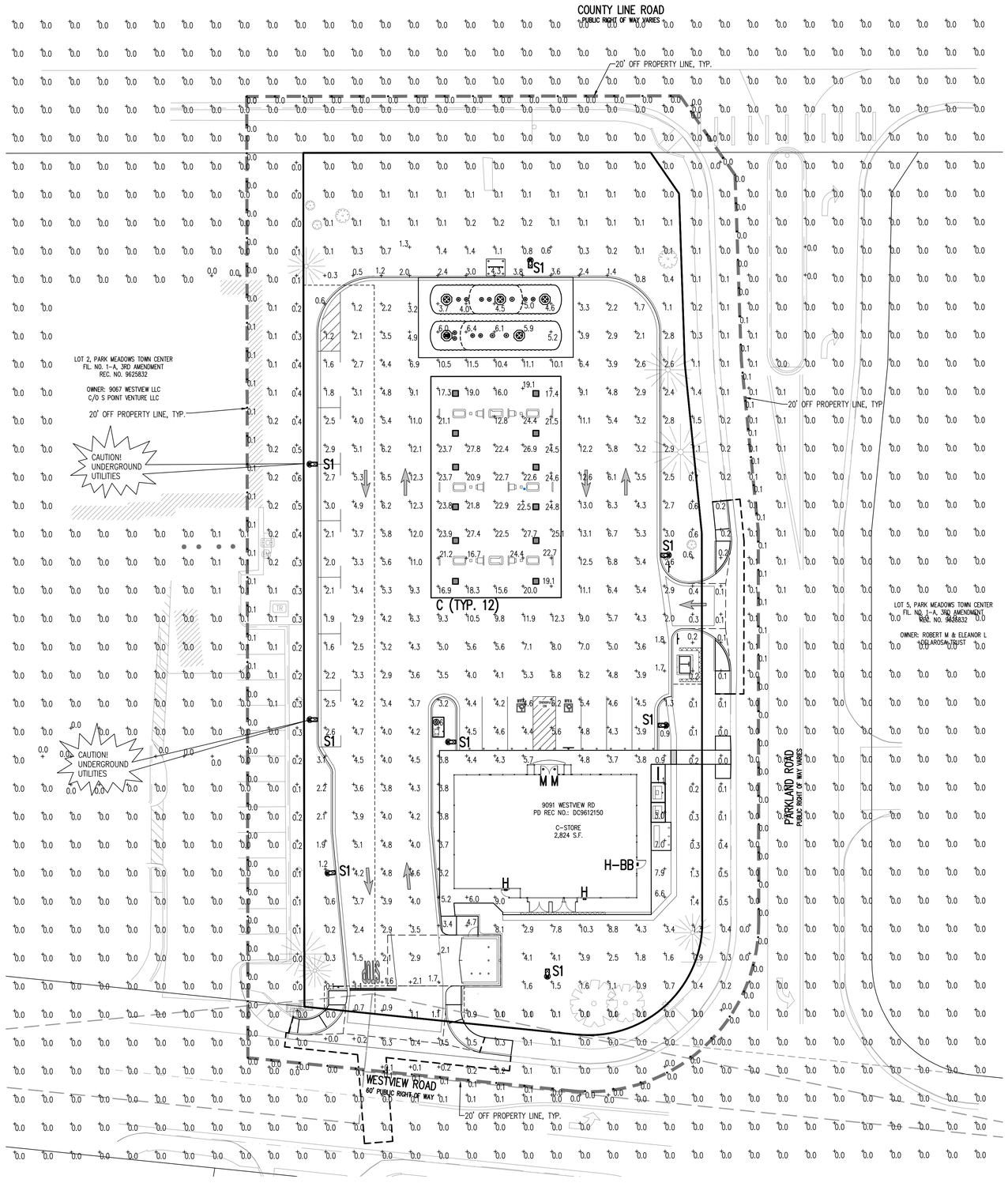
COLORADO LICENSED JOSEPH D. PAGE 42470 PROFESSIONAL ENGINEER 11/05/2026

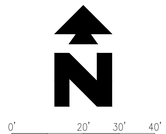
SUBMITTAL	DATE	PRN	PM	DES	DRW
CD 4TH	11/05/26	MOC148	JDP	SE	DMH

TRASH ENCLOSURE DETAILS
MURPHY USA (NTI)
9091 WESTVIEW RD
LONE TREE COLORADO

Galloway
5500 Greenwood Plaza Blvd., Suite 200
Greenwood Village, CO 80111
303.770.8884 • GallowayUS.com

MURPHY OIL USA, INC.
MURPHY USA
200 PEACH STREET
EL DORADO, AR 71730





LUMINAIRE SCHEDULE

MOUNTING CONFIG.	SYMBOL	QTY	ASSEMBLY HEIGHT	POLE HEIGHT	LUMENS	TOTAL WATTS	MODEL NUMBER	DESCRIPTION
S1		8	24'-0"	22'-0"	18904	135	SLM-18L-SIL-FT-UNV-40-70-BRZ-IL	LSI LIGHTING, SLICE MEDIUM LED SERIES AREA LIGHT, 18,000 LUMENS PACKAGE, 4000K 70 CRI, SINGLE HEAD FLAT LENS FIXTURE WITH INTEGRAL LOUVER, FORWARD THROW
C		12	15'-0"	N/A	10725	73	CRUS-SC-LED-LW-40-UE-WHT	LSI LIGHTING, LEGACY SERIES, LOW WATT DRIVER, FLAT LENS CANOPY FIXTURE, 4000K
H		2	8'-3"	N/A	4124	30	XWM 3 LED O4L 40 UE BRZ	LSI LIGHTING, MIRADA (VNW) WALL MOUNT LUMINAIRE, 4000K CCT, 4000 LUMEN PACKAGE,
H-BB		1					XWM 3 LED O4L 40 UE BRZ CWBB	BRONZE COLOR, H-BB WITH BATTERY BACK-UP
M		2	8'-8"	N/A	2333	22	LCD6LED25LUNVDIM135WF TR6RWHAZ EM	LSI LIGHTING, LCD6 DOWN LIGHT LUMINAIRE, 3500k CCT, 2500 LUMENS, WIDE FLOOD HAZE SEMI-DIFFUSED WALL WASH REFLECTOR, WHITE OR EQUIVALENT

NOTES: ALL AREA SITE LIGHT FIXTURES AND POLES TO BE MOUNTED ON CONCRETE BASE PER DETAIL, THIS SHEET
ALL ANCHOR BOLTS TO BE ORIENTED IN THE SAME DIRECTION (SQUARE) AT INSTALLATION PER MANUFACTURER'S SPECIFICATIONS.
ALL PROPOSED FIXTURES ARE FULL CUT-OFF FIXTURES

POLE SCHEDULE

MOUNTING CONFIG.	SYMBOL	QTY	POLE HEIGHT	MODEL NUMBER	DESCRIPTION
S1		8	22'-0"	4SQB3-S11G-22-S-BRZ-4BC	LSI LIGHTING, STEEL SQUARE POLE, BOLT-ON ARM MOUNT, BRONZE

NOTES: ALL AREA SITE LIGHT FIXTURES AND POLES TO BE MOUNTED ON CONCRETE BASE PER DETAIL, THIS SHEET
POLES RATED TO 130 MPH WIND VELOCITY

NOTES:

PLAN WAS BASED ON THE INFORMATION PROVIDED, ALL DIMENSIONS, LUMINAIRE LOCATIONS SHOWN REPRESENT RECOMMENDED POSITIONS. THE ENGINEER AND/OR ARCHITECT MUST DETERMINE APPLICABILITY OF THE LAYOUT TO EXISTING OR FUTURE FIELD CONDITIONS.

THE CALCULATED PHOTOMETRIC LEVELS MAY OR MAY NOT MEET CERTAIN STANDARDS OR RECOMMENDED PRACTICES OF IESNA.

THE PHOTOMETRIC PLAN REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS UTILIZING CURRENT INDUSTRY STANDARD LAMP RATINGS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY (IES) APPROVED METHODS. LABORATORY TESTS ARE MADE UNDER OPTIMUM CONDITION, WITH LAMP OUTPUT AT RATED VALUE, AND IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS.

ACTUAL ILLUMINANCE LEVELS MAY DIFFER DUE TO VARIABLE FIELD CONDITIONS SUCH AS (BUT NOT LIMITED TO); VARIANCE IN LAMP LUMEN OUTPUT; LAMP TILT FACTOR; BALLAST WATTAGE OUTPUT; LINE VOLTAGE AT BALLAST; REFLECTOR SPECULARITY; LAMP LUMEN DEPRECIATION; AND LUMINAIRE DIRT DEPRECIATION.

THE 24'-0" MOUNTING HEIGHT IS THE ACTUAL ASSEMBLY (POLE, BASE, AND FIXTURE) AND MAY DIFFER FROM THE FROM THE LUMINAIRE'S LUMINOUS APERTURE.

THIS PLAN IS FOR RELATIVE LAYOUT AND SCOPE OF WORK PURPOSES ONLY. REFER TO SITE PLAN PREPARED BY LOCAL CONSULTANT FOR RELATIONSHIP OF THESE LUMINAIRES AND THEIR LOCATIONS TO EXISTING STRUCTURES AND REFERENCE.

ILLUMINATION TO BE EXTINGUISHED BETWEEN 11 P.M. AND SUNRISE OR WHEN THE BUSINESS IS CLOSED, WHICHEVER IS LATER.

CONTRACTOR TO ENSURE THE LIGHT POLE AND HANDICAP PARKING SIGN ARE AT LEAST 2' FROM THE BACK OF CURB TO PREVENT VEHICLES FROM STRIKING THE LIGHT POLE OR HANDICAP PARKING SIGN. PROPOSED LIGHT POLE BASES SHOWN AT A MINIMUM OF 2'-6" FROM BACK OF CURB TO CENTER OF POLE/BASE. ENGINEER TO VERIFY PROPOSED LOCATIONS FOR ANY CONFLICTS OR MISPLACEMENTS. REPORT TO LIGHTING DESIGNER ANY DISCREPANCIES OR CONFLICTS

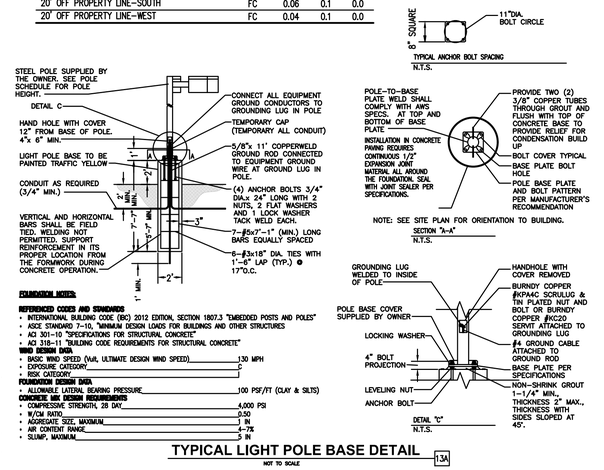
CALCULATION SUMMARY

LABEL	UNITS	AVG	MAX	MIN	UNIFORMITY AVG/MIN
CANOPY	FC	21.06	27.6	12.6	1.70:1
CANOPY APPROACH	FC	9.62	13.0	5.0	1.72:1
PARKING-FRONT	FC	4.55	6.2	3.2	1.42:1
PARKING-WEST	FC	2.25	3.0	1.6	1.41:1
OPEN SPACE-SOUTHEAST	FC	2.42	4.1	1.1	2.20:1
TANK FILL AREA	FC	5.90	6.4	2.5	2.36:1
TRASH ENCLOSURE AREA	FC	3.56	8.1	1.7	2.09:1
LABEL	UNITS	AVG	MAX	MIN	
20' OFF PROPERTY LINE-NORTH	FC	0.00	0.0	0.0	
20' OFF PROPERTY LINE-EAST	FC	0.04	0.1	0.0	
20' OFF PROPERTY LINE-SOUTH	FC	0.06	0.1	0.0	
20' OFF PROPERTY LINE-WEST	FC	0.04	0.1	0.0	

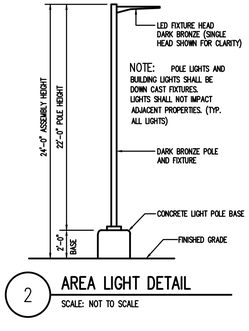
SCHEDULE:

0.1 — LOCATION OF FOOT-CANDLE MEASUREMENT AT GRADE
0.1 — FOOT-CANDLE READING AT GRADE

0.1 — LOCATION OF FOOT-CANDLE MEASUREMENT AT GRADE AT 20' OFF PROPERTY LINE
0.1 — FOOT-CANDLE READING AT GRADE



TYPICAL LIGHT POLE BASE DETAIL 1.3A
NOT TO SCALE



2 AREA LIGHT DETAIL
SCALE: NOT TO SCALE

CITY OF LONE TREE

DATE

THE CONSTRUCTION PLANS HAVE BEEN REVIEWED BY THE CITY OF LONE TREE FOR SITE IMPROVEMENTS, STORM SEWER, GRADING AND EROSION CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

SHEET NO. L-1.0

COLORADO LICENSED JOSEPH D PACK 42470 PROFESSIONAL ENGINEER

CD 4TH SUBMITTAL	11/05/26	MOC148	JDP	SE	DMH
	DATE	PRN	PM	DES	DRW

PHOTOMETRIC SITE PLAN
MURPHY USA (NTI)
9091 WESTVIEW RD
LONE TREE COLORADO

Galloway
5500 Greenwood Plaza Blvd, Suite 200
Greenwood Village, CO 80111
303.770.8884 • GallowayUS.com

MURPHY OIL USA, INC.
MURPHY USA
200 PEACH STREET
EL DORADO, AR 71730

Catalog #: _____ Project: _____

Prepared By: _____ Date: _____ Type: C

Scottsdale® Legacy (CRUS)

LED Canopy Luminaire



IP66 IK08

OVERVIEW	
Lumen Package	5,000 - 22,000
Wattage Range	38 - 152
Efficacy Range (LPW)	114 -156
Weight lbs(kg)	23 (10.4)

QUICK LINKS

Ordering Guide | Performance | Photometrics | Dimensions

FEATURES & SPECIFICATIONS

Construction

- Features a ultra-slim 11/16" profile die-cast housing, with flat clear or diffused tempered glass lens. Unit is water-resistant, sealed and IP66 rated. Integral designed heat sink does not trap dirt and grime, ensuring cool running performance over the life of the fixture.
- Standard color is white and is finished with LSI's DuraGrip® polyester powder coat process. DuraGrip withstands extreme weather changes without cracking or peeling.
- Luminaire assembly incorporates a pressure stabilizing vent breather to prevent seal fatigue and failure.

Optical System

- Features an array of select, mid-power, high brightness, high efficiency LED; 3000K, 4000K, 5000K color temperature, 80 CRI (nominal).
- Choice of Symmetric or Asymmetric distribution. Asymmetric provides a wider distribution pattern. Optional symmetric with diffused lens also available.
- Forward Throw distribution provides an industry leading unique distribution pattern that illuminates the area under the gas canopy and beyond. The forward through optic directs the light to the forecourt from the gas canopy eliminating the need for supplemental floodlights and extensive perimeter lighting.
- Diffuse lens available as an option to soften brightness of the luminaire.
- Six Lumen Packages: 5,000, 9,000, 10,000, 13,000, 18,000 and 22,000 Lumens.

Electrical

- High performance factory programmable driver features over-voltage, under voltage, short-circuit and over temperature protection with integral 6kV surge protection that meets IEEE C62.41.2 and ANSI C82.77-5 Location Category C Low standards. Additional field replaceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/ IEEE C62.41.2). Custom lumen and wattage packages available.
- Driver components are fully encased in potting for moisture resistance. Complies with IEC and FCC standards. 0-10 V dimming supplied standard with all drive currents.
- Die-cast aluminum, wet location rated driver/electrical enclosure is elevated above canopy deck to prevent water entry, provide easy "knock-out" connection of primary wiring and acts as the primary heatsink ensuring cool operation of internal components for longer life. Seals to optical housing via one-piece molded silicone gasket.
- Universal voltage power supply, 120-277 VAC, 50/60 HZ and 347-480 VAC, 50/60 HZ input.
- -40°C to 55°C (-40°F to 131°F) ambient operating temperature. (Varies based on lumen package and mounting style see performance data for specifics.)
- Minimum 60,000 to 100,000 hours depending upon the ambient temperature of the installation location (see performance data for specifics.)

Hazardous Location

- Designed for lighter than air fuel applications. Product is suitable for Class 1 Divisions 2 only when properly installed per LSI installation instructions. See lsicorp.com for specific guidance. Not available on SLW.

Installation

- One-person installation.
- Installs in a 12" or 16" deck pan. Deck penetration consists of a 4" hole, simplifying installation and water sealing. Unit is designed to quickly retrofit into existing Scottsdale (4") hole as well as openings for Encore and Encore Top Access and to reconnect wiring for the SC/ECTA without having to relocate the conduit.
- Retro panels are available for existing Encores as well as kits for recessed and 2x2 installations (see separate spec sheets). Support brackets are provided standard, to prevent sagging of deck.

Warranty

- LSI LED fixtures carry a 5-year warranty (contact your LSI representative for extended warranty options.)

Listings

- UL and ETL listed to UL 1598, UL 8750 and other U.S. and International safety standards. Suitable for wet locations.
- DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.
- Meets Buy American Act requirements.
- IDA compliant with 3000K or lower color temperature.

Type: C

Scottsdale® Legacy (CRUS) LED Canopy Luminaire

ORDERING GUIDE

Back to Quick Links

TYPICAL ORDER EXAMPLE: **CRUS SC LED SS 50 UE WHT**

Prefix	Distribution	Light Source	Driver	Color Temperature	Input Voltage	Finish	Options[4]
CRUS - LED Canopy Luminaire	**SC** - Symmetric **AC*** - Asymmetric **SCFT*** - Combination Standard Symmetric and Forward Throw	**LED**	**SLW** - 5,000 Lumens **VLW** - 9,000 Lumens **LW** - 11,000 Lumens **XL** - 13,000 Lumens **HO** - 15,000 Lumens **VHO** - 22,000 Lumens[2] **Custom Lumen Packages[2]** **VHO** - 22,000 Lumens	**50** - 5000K **40** - 4000K **30** - 3000K	**UE** - Universal Voltage (120 - 277V) **HV** - High Voltage (347 - 480V)	**WHT** - White **BRZ** - Bronze **BLK** - Black	**HL*** - Hazardous Location **DFL** - Diffuse Lens

Accessory Ordering Information (Accessories are field installed)

Description	Order Number
Retrofit Panels - EC / ECTA / 52T to CRUS, for 16" Deck Panel	525946
Retrofit Panels - ECTA / 52T to CRUS, for 12" Deck Panel	530281
Retrofit 2x2 Cover Panel Blank (no holes)	357282

Description	Order Number
Retrofit IBC Cover Panel Blank (no holes)	354152
Kit - Hole Plugs and Silicone (enough for 25 retrofits)[1]	532540

*Consists of (25) 538** hole plugs, (100) 6/8&" hole plugs and (1) tube of RTV.

1 AC distribution utilizes a reflector which alters the look from a standard SC distribution.
2 FT distribution option only available with VHO (22,000 lumen) package.
3 Custom lumen and wattage packages available consult factory Values are within industry standard tolerances but not DLC listed.
4 Not available with SCFT.
5 Not available in SLW.

Catalog #: _____ Project: _____

Prepared By: _____ Date: _____ Type: S1

Slice Medium (SLM)

Outdoor LED Area Light



IP66 IK08

OVERVIEW	
Lumen Package	9,000 - 48,000
Wattage Range	63 - 401
Efficacy Range (LPW)	112 - 156
Weight lbs(kg)	30 (13.6)

QUICK LINKS

Ordering Guide | Performance | Photometrics | Dimensions

FEATURES & SPECIFICATIONS

Construction

- Rugged die-cast aluminum housing contains factory prewired driver and optical unit. Cast aluminum wiring access door located underneath.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Shipping weight: 37 lbs in carton.

Optical System

- State-of-the-Art one piece silicone optic sheet delivers industry leading optical control with an integrated gasket to provide IP66 rated seal.
- Proprietary silicone refractor optics provide exceptional coverage and uniformity in distribution types 2, 3, 5W, FT, FTA and AM.
- Silicone optical material does not yellow or crack with age and provides a typical light transmittance of 93%.
- Zero uplight.
- Available in 5000K, 4000K, and 3000K color temperatures per ANSI C78.377. Also available in phosphor converted amber with Peak intensity at 610nm.
- Minimum CRI of 70.
- Integral louver (IL) and house-side shield (IH) options available for improved backlight control without sacrificing street side performance. See page 3 for more details.

Electrical

- High-performance driver features overvoltage, under-voltage, short-circuit and over temperature protection.
- Standard Universal Voltage (120-277 VAC) Input 50/60 Hz or optional High Voltage (347-480 VAC).
- L80 Calculated Life: >100k Hours (See Lumen Maintenance on Page 5)
- Total harmonic distortion: <20%
- Operating temperature: -40°C to +50°C (-40°F to +122°F). 42L and 48L lumen packages rated to +40°C.
- Power factor: > 90
- Input power stays constant over life.
- Field replaceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- High-efficacy LEDs mounted to metal-core circuit board to maximize heat dissipation
- Driver is fully encased in potting material for moisture resistance and complies with FCC standards. Driver and key electronic components can easily be accessed.

Controls

- Optional integral passive infrared Bluetooth™ motion and photocell sensor. Fixtures operate independently and can be commissioned via iOS or Android configuration app.
- LSI's AirLink™ wireless control system options reduce energy and maintenance costs while optimizing light quality 24/7.

Installation

- A single fastener secures the hinged door, underneath the housing and provides quick & easy access to the electrical compartment.
- Included terminal block accepts up to 12 ga. wire.
- Utilizes LSI's traditional B3 drill pattern. (See drawing on page 9)

Warranty

- LSI luminaires carry a 5-year limited warranty. Refer to https://www.lsiindustries.com/resources/terms-and-warranty.aspx for more information.

Listings

- Listed to UL 1598 and UL 8750.
- Meets Buy American Act requirements.
- IDA compliant; with 3000K color temperature selection.
- Title 24 Compliant; see local ordinance for qualification information.
- Suitable for wet locations.
- IP66 rated Luminaire per IEC 60598-1.
- 3G rated for ANSI C136.31 high vibration applicationsapplicationsare qualified.
- IK08 rated luminaire per IEC 66262 mechanical impact code.
- DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.
- Patented Silicone Optics (US Patent NO. 10,816,165 B2)

Type: S1

Slice Medium Outdoor LED Area Light

ORDERING GUIDE

Back to Quick Links

TYPICAL ORDER EXAMPLE: **SLM LED 36L SIL FTA UNV DIM 50 70CRI ALSCS04 BRZ IL**

Luminaire Prefix	Light Source	Lumen Package	Light Output	Distribution	Orientation[1]	Voltage	Driver
SLM - Slice Medium	**LED**	**9L** - 9,000 lms **12L** - 12,000 lms **15L** - 15,000 lms **24L** - 24,000 lms **30L** - 30,000 lms **36L** - 36,000 lms **42L** - 42,000 lms **48L** - 48,000 lms **Custom Lumen Packages[1]**	**SIL** - Silicone	**2** - Type 2 **3** - Type 3 **5W** - Type 5 Wide **FT** - Forward Throw **FTA** - Forward Throw Automotive **AM** - Automotive Merchandise	**(Blank)** - standard (no rotation) **L** - Optics rotated left 90° **R** - Optics rotated right 90°	**UNV** - Universal Voltage (120-277V) **HV** - High Voltage (347-480V)	**DIM** - 0-10V Dimming (0-10%)

Color Temp	Color Rendering	Controls (Choose One)	Finish	Options
50 - 5,000 CCT **40** - 4,000 CCT **30** - 3,000 CCT **AMB** - Phosphor Converted Amber[2]	**70CRI** - 70 CRI	**(Blank)** - None **Wireless Controls System:** **ALSC** - AirLink Synapse Control System **ALSCS02** - AirLink Synapse Control System with 12-20' Motion Sensor **ALSCS04** - AirLink Synapse Control System with 20-40' Motion Sensor **ALBCS1** - AirLink Blue Wireless Motion & Photo Sensor Controller (8-24' mounting height) **ALBCS2** - AirLink Blue Wireless Motion & Photo Sensor Controller (25-40' mounting height) **Stand-Alone Controls:** **CXT** - 0-10V Dimming leads extended to housing exterior **CRTP** - 7 Pin Control Receptacle ANSI C136.41[3] **IMSBT1**- Integral Bluetooth™ Motion and Photocell Sensor (8-24' MH)[4] **IMSBT2** - Integral Bluetooth™ Motion and Photocell Sensor (25-40' MH)[4] **Button Type Photocells** **PC120** - 120V **PC208-277** - 208 -277V **PC347** - 347V	**BLK** - Black **BRZ** - Dark Bronze **GMG** - Gun Metal Gray **GPT** - Graphite **MSV** - Metallic Silver **PLP** - Platinum Plus **SVG** - Satin Verde Green **WHT** - White	**(Blank)** - None **IH** - Integral Housesside Shield[5] **IL** - Integral Louver (Sharp Spill Light Cutoff)[6]

Accessories Ordering Information[6]

Controls Accessories

Description	Order Number
Twist Lock Photocell (120V) for use with CR7P[7]	122514
Twist Lock Photocell (208-277) for use with CR7P[7]	122515
Twist Lock Photocell (347V) for use with CR7P[7]	122516
Twist Lock Photocell (480V) for use with CR7P[7]	122530
AirLink 5 Pin Twist Lock Controller[8]	614109
AirLink 7 Pin Twist Lock Controller[8]	661410
Pole-Mounted Occupancy Sensor (24V)	662084CLR[9]
Shorting Cap for use with CR7P[7]	14632

Fusing Options[10]

Description	Order Number
Single Fusing (120V)	See Fusing Accessory Guide
Single Fusing (277V)	
Double Fusing (208V, 240V)	
Double Fusing (480V)	
Double Fusing (347V)	

Shielding Options

Mirada Small
Mirada Medium
Mirada Large
Zone Medium
Zone Large
Slice Medium

See Shielding Guide

Mounting Accessories[6]

Description	Order Number
Round Pole Adapter (2" Round/Tapered Poles)	4082130LR
Round Pole Adapter (4" Round Poles)	3196613LR
Round Pole Adapter (5" Round Poles)	3196663LR
Universal Mounting Bracket	6846162LR
Adjustable Slip Fitter (2" - 2 3/8" Tenon)	6881380LR
Quick Mount Pole Bracket (Square Pole)	6870730LR
Quick Mount Pole Bracket (4-5" Round Pole)	6899603LR
15 TAB Quick Mount Pole Bracket (Square Pole)	6899602LR
15 TAB Quick Mount Pole Bracket (4-5" Round Pole)	6899650LR
Wall Mount Bracket	3821320LR
Wood Pole Bracket (8" Minimum Pole Diameter)	7512190LR

Shielding & Miscellaneous Accessories

Description	Order Number
Integral LouverShield	684812
Internal Housesside Shield	743414
10' Linear Bird Spike Kit (6' Recommended per Luminaire)	751632

FOOTNOTES:

1. Custom lumen and wattage packages available, consult factory. Values are within industry standard tolerances but not DLC listed.
2. Consult factory for availability.
3. Consult factory for availability.
4. IMSBT is field configurable via the LSI app that can be downloaded from your smartphone's native app store.
5. Control device or shorting cap must be ordered separately. See Accessory Ordering Information.
6. Accessories are shipped separately and field installed.
7. Fusing must be located in hand hole for pole or in the junction box.
8. "CLR" to be replaced by paint finish selection. See Finish options for paint color selections.
9. Only available in 9L and 12L Lumen Packages. Consult factory for lead time and availability.
10. Fusing must be located in hand hole of pole. See Fusing Accessory Guide for compatability.
11. Only available in 9L and 12L Lumen Packages. Consult factory for lead time and availability.

Catalog #: _____ Project: _____

Prepared By: _____ Date: _____ Type: H & H-BB

Mirada Medium Wall Sconce (XWM)

Outdoor Wall Sconce



IK08

OVERVIEW	
Lumen Package (lm)	3,000 - 21,000
Wattage Range (W)	23 - 175
Efficacy Range (LPW)	125 - 158
Weight lbs (kg)	27 (12.2)

QUICK LINKS

Ordering Guide | Performance | Photometrics | Dimensions

FEATURES & SPECIFICATIONS

Construction

- Rugged die-cast aluminum housing contains factory prewired driver and optical unit. Hinged die-cast aluminum wiring access door located underneath.
- Galvanized-steel universal wall mount bracket comes standard with hinging mechanism to easily access the junction box wire connections without removing the luminaire.
- Optional pole-mounting bracket (XPMA) permits mounting to standard poles.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Max shipping weight: 30lbs in carton

Optical System

- State-of-the-Art one piece silicone optic provides industry leading optical control while also acting as an integrated gasket reducing system complexity and improving fixture reliability.
- Proprietary silicone refractor optics provide exceptional coverage and uniformity in Types 2, 3, and Forward Throw (FT) distributions.
- Silicone optical material does not yellow or crack with age and provides a typical light transmittance of 93%.
- Zero uplight.
- Available in 5000K, 4000K and 3000K color temperatures per ANSI C78.377. Also Available in Phosphor Converted Amber with Peak intensity at 610nm.
- Minimum CRI of 70.

Electrical

- High-performance programmable driver features over-voltage, under-voltage, short-circuit and over temperature protection. Custom lumen and wattage packages available.
- 0-10V dimming (10% - 100%) standard.
- Standard Universal Voltage (120-277 Vac) Input 50/60 Hz or optional High Voltage (347-480 Vac).
- L80 Calculated Life: >100k Hours
- Total harmonic distortion: <20%
- 3L to 12L operating temperature: -40°C to +50°C (-40°F to +122°F).
- 15L operating temperature: -40°C to +45°C (-40°F to +113°F).
- 18L operating temperature: -40°C to +40°C (-40°F to +104°F).
- 21L operating temperature: -40°C to +35°C (-40°F to + 95°F).
- Power factor: > 90
- Input power stays constant over life.
- Optional 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- High-efficacy LEDs mounted to metal-core circuit board to maximize heat dissipation
- Components are fully encased in potting material for moisture resistance. Driver complies with FCC standards. Driver and key electronic components can easily be accessed via hinged door.
- Optional integral emergency battery pack provides 90-minutes of constant power to the LED system, ensuring code compliance. A test switch/indicator button is installed on the housing for ease of maintenance. The fixture delivers 1500 lumens during emergency mode.

Controls

- Integral passive infrared Bluetooth™ motion sensor options. Fixtures operate independently and can be commissioned via an iOS or Android configuration app. Updates and modifications to the control strategy are easily implemented via an intuitive app.
- LSI's AirLink™ Blue lighting control system is a simple feature rich wireless Bluetooth mesh network. The integrated fixture sensor module provides wireless control of grouped fixtures based on motion sensors, daylight or a fully customizable schedule.

Installation

- Universal wall mounting plate easily mounts directly to 4" octagonal or square junction box.
- 2 fasteners secure the hinged door underneath the housing and provide quick & easy access to the electrical compartment for installing/servicing.
- Optional terminal block accepts up to 12 ga wire.

Warranty

- LSI luminaires carry a 5-year limited warranty. Refer to https://www.lsicorp.com/resources/terms-conditions-warranty/ for more information.
- 1 Year warranty on Battery Back-up option.

Listings

- Listed to UL 1598 and UL 8750.
- Meets Buy American Act requirements.
- IDA compliant; with 3000K or lower color temperature selection.
- Title 24 Compliant; see local ordinance for qualification information.
- Suitable for wet Locations.
- IP65 rated luminaire per IEC 60598.
- 3G rated for ANSI C136.31 high vibration applications when pole mounted (using optional XPMA bracket) or wall mounted.
- IK08 rated luminaire per IEC 66262 mechanical impact code
- DesignLights Consortium® (DLC) Premium qualified product. Not all versions of this product may be DLC Premium qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

Type: H & H-BB

Mirada Medium Wall Sconce (XWM) Outdoor Wall Sconce

Have questions? Call us at (800) 436-7800

ORDERING GUIDE

Back to Quick Links

TYPICAL ORDER EXAMPLE: **XWM 2 LED 03L 30 UE BRZ ALSC**

Family	Distribution	Light Source	Lumen Package	Color Temperature
XWM - Mirada Medium Wall Sconce	**2** - Type 2 **3** - Type 3 **FT** - Type 4 Forward Throw	**LED**	**3L** - 3,000 **6L** - 6,000 **9L** - 9,000 **12L** - 12,000 **15L** - 15,000 **18L** - 18,000 **21L** - 21,000 **Custom Lumen Packages[1]**	**30** - 3000K **40** - 4000K **50** - 5000K **AMB** - Phosphor Converted Amber[2]

Voltage	Finish	Controls	Options
UE - Universal Voltage (120-277V) **HV** - High Voltage (347-480V)	**BLK** - Black **BRZ** - Dark Bronze **GMG** - Gun Metal Gray **GPT** - Graphite **MSV** - Metallic Silver **PLP** - Platinum Plus **SVG** - Satin Verde Green **WHT** - White	**Blank** - None **Wireless Controls** **ALSC** - AirLink Synapse Control System **ALSCS01** - AirLink Synapse Control System with 8-12' Motion Sensor **ALSCS02** - AirLink Synapse Control System with 12-20' Motion Sensor **ALBCS1** - AirLink Blue Wireless Motion & Photo Sensor Controller (8-24' MH)[3] **ALBCS2** - AirLink Blue Wireless Motion & Photo Sensor Controller (25-40' MH)[3] **Standalone Controls** **CXM** - 0-10v Dimming leads extended to housing exterior **IMSBT1** - Integral Bluetooth™ Motion and Photocell Sensor (8-24' MH)[3,4] **IMSBT2** - Integral Bluetooth™ Motion and Photocell Sensor (25-40' MH)[3,4] **Button Type Photocells** **PC120** - 120V **PC208-277** - 208 -277V **PC347** - 347V	**Blank** - None **BB** - Battery Back-up (PYC)[5] **HBB** - 4000 Working Battery Backup (CPCV)[5] Hi-BB **XPMA** - Pole Mounting Bracket **SPL** - 10kV Surge Protection **TB** - Terminal Block

Need more information? Click here for our glossary

Have additional questions? Call us at (800) 436-7800

FUSING ACCESSORY ORDERING INFORMATION[6]

Part Number	Description
FK120'	FK120 - Single Fusing
FK277'	FK277 - Single Fusing
FK347'	FK347 - Single Fusing
DFK208'	DFK - Double Fusing
DFK240'	DFK - Double Fusing (240V)
DFK480'	DFK - Double Fusing (480V)

MOUNTING ACCESSORY ORDERING INFORMATION[6]

Part Number[7]	Description
3560152LR	XWM Wet Location Surface Conduit/Wiring Box
751632	10' Linear Bird Spike Kit (2' Recommended per Luminaire)

1 Custom lumen and wattage packages available consult factory. Values are within industry standard tolerances but not DLC listed.
2 Only available in 6L Lumen Package. Consult factory for lead time and availability.
3 IMSBT and ALBCS control options are not available in 3L or 4L lumen packages when high voltage (HV) is specified.
4 IMSBTxL is field configurable via the junction app that can be downloaded from your smartphone's app store.
5 Not available in 4K.
6 Accessories are shipped separately and field installed.
7 Fusing must be located in a hand hole for pole or in the junction box.
8 "CLR" to be replaced by paint finish selection. See Finish options for paint color selections.

Type: M

Catalog # : | Project :

Prepared By : | Date :

LCD6

6" LED Commercial Downlight



6 inch LED new construction downlight delivers superior performance and energy efficiency. Designed to use anodized aluminum reflectors delivering even illumination and low glare. The high performance luminaire offers 1000 up to 4000 lumens with color temperatures of 2700K, 3000K, 3500K, 4000K at 80 CRI. Standard driver offers universal (120-277V) and 0 -10V dimming down to 1%. The LCD series is ideal for low to medium ceiling heights for retail, hospitality and commercial applications.

origin™

Features & Specifications

Optical System

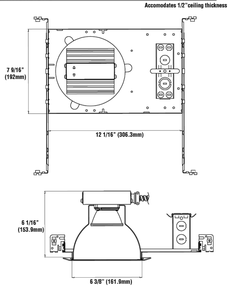
- LED source provides superior lumen output with maximum visual comfort.
- Tailored spot, narrow flood, flood and wide flood beam optics designed for glare free illumination.
- Choice of flanged or flangeless spun reflector utilizing heavy gauge highly reflective diffuse anodized aluminum to deliver low glare, even illumination of the space.
- Reflectors are retained with three retention clips holding the flange tight to the finished ceiling surface.
- Minimum CRI of 80.

Electrical

- High-performance driver features over-voltage, under voltage, short-circuit and over temperature protection.
- 0-10 volt dimming (1% - 100%) standard.
- Standard Universal Voltage (120-277 Vac) Input 50/60 Hz.
- L70 Calculated Life: > 50k Hours projected @ 25°C per IESNA TM-21-11.
- Total harmonic distortion: <20%
- Power factor: >.90
- Input power stays constant over life.
- Compatible with Triac (forward-phase or leading-edge), ELV (reverse-phase or trailing edge) dimming only at 120 Vac.
- Driver can be accessed from below plenum for servicing.
- High-efficacy LEDs with integrated circuit board mount directly to an extruded aluminum heatsink to maximize heat dissipation and promote long life.
- Remote Emergency Battery (120-277V) field installed is available to meet critical life safety lighting requirements. The 90-minute battery provides 7.8watts constant power to the LED system, ensuring code compliance To calculate light output during emergency mode(EM battery 7.8 watts x LPW of fixture being powered - see spec sheet). Detailed wiring diagram and installation instructions located on website.

Intertek | Dimmable | RoHS COMPLIANT | Damp Location

Dimensions



Type: M

LCD6

6" LED Commercial Downlight

Luminaire Ordering Guide

TYPICAL ORDER EXAMPLE: **LCD6 LED 25L UNV DIM1 35 NF TR6R HAZ**

Family/ Size	LED Gen	Lumen Package	Voltage	Driver	Color Temperature	CRI	Beam Option[4]
LCD6 - 6" New Construction[1]	**LED**	**10L** - 1,000 **15L** - 1,500 **20L** - 2,000 **25L** - 2,500 **41L** - 4100	**UNV** - 120-277V	**DIM1** - Dims to 1% (0-10V dimming)	**30** - 3000K **35** - 3500K **40** - 4000K	**Blank** - 80 CRI	**SF** - Spot **NF** - Narrow Flood **FL** - Flood **WF** - Wide Flood

	Reflector	Finish
Self-Fange	**TR6R** - Open Reflector	**SF HAZ** - Haze semi- diffused
		SF SPC - Specular clear
	TR6RWW - Wall Wash[2]	**SF HAZ** - Haze semi-diffused
Flangeless (ship standard w/ white plastic trim ring)	**TR6R** - Open Reflector	**HAZ** - Haze semi-diffused, white trim ring
		SPC - Specular clear, white trim ring
	TR6RFL - Frosted Floating Lens[3]	**HAZ** - Haze semi-diffused Reflector w/ Frosted Floating Lens, w/ integrated white metal trim ring (optional trim ring not compatible)
		SPC - Specular Clear Reflector w/ Frosted Floating Lens, w/ integrated white metal trim ring (optional ring not compatible)
	TR6RWW - Wall Wash[2]	**HAZ** - Haze semi-diffused wall wash reflector, white trim ring
	TR6B - Baffle	**HAZ** - Haze semi-diffused reflector
		WH - White baffle and white trim ring
		BL - Black Baffle and white trim ring
	TR6BL - Baffle w/ Regressed Lens[3]	**HAZ** - Hazed semi-diffused
		WH - White baffle and white trim ring
		SPC - Specular clear
		BL - Black baffle and white trim ring
	TR6RL - Regressed Lens[3]	**HAZ** - Haze semi-diffused reflector w/ specular clear regressed lens and white trim ring
		SPC - Specular clear reflector w/ specular clear regressed lens and white trim ring

Accessory Ordering Information (Accessories are field installed)

Description	Order Number
WH - White metal trim ring (only compatible w/flangeless trims)	618108
EM - Emergency Battery	618633

NOTES:
1. Regressed lens trims are wet location listed. All other trims are rated for damp location.
2. TR6RWW wall wash reflector comes with 45° integrated optic; additional beam optics not compatible
3. TR6RFL frosted floating lens comes with integrated white metal trim; accessory white metal trim ring not required)
4. Housing can ship ahead of the light engine and reflector
5. 90 CRI requires 55 day leadtime & 100 MOQ; Consult Factory
6. Refer to IES Files for Beam Spread.

CITY OF LONE TREE

DATE

THE CONSTRUCTION PLANS HAVE BEEN REVIEWED BY THE CITY OF LONE TREE FOR SITE IMPROVEMENTS, STORM SEWER, GRADING AND EROSION CONTROL IMPROVEMENTS ONLY.

ENGINEERING DIVISION ACCEPTANCE BLOCK

SHEET NO. L-1.1

COLORADO LICENSED JOSEPH D. PAPA 42470 PROFESSIONAL ENGINEER 11/05/2026

CD 4TH SUBMITTAL	11/05/26	MOC148	PRN	JDP	PM	SE	DES	DMH	DRW
	DATE								

PHOTOMETRIC DETAILS
MURPHY USA (NTI)
9091 WESTVIEW RD
LONE TREE COLORADO

Galloway
5500 Greenwood Plaza Blvd. Suite 200
Greenwood Village, CO 80111
303.770.8884 • GallowayUS.com

MURPHY OIL USA, INC.
MURPHY USA
200 PEACH STREET
EL DORADO, AR 71730