TIMES SQUARE AT SARATOGA

IN
SARATOGA SPRINGS, UTAH

GENERAL

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE "APWA 2012 STANDARD PLANS AND SPECIFICATIONS", AND THE CURRENT "STANDARD TECHNICAL SPECIFICATIONS AND DRAWINGS FOR THE CITY OF SARATOGA SPRINGS".
2. A PRE CONSTRUCTION CONFERENCE WITH CITY ENGINEER, CITY PUBLIC WORKS DEPT. AND CONTRACTOR MUST BE HELD A MINIMUM OF 48 HOURS PRIOR TO START OF WORK.
3. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING DRAINAGE FACILITIES WITHIN THE CONSTRUCTION AREA UNTIL THE DRAINAGE IMPROVEMENTS ARE IN PLACE AND FUNCTIONING.
4. ALL CONTRACTORS WORKING WITHIN THE PROJECT BOUNDARIES ARE RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE SAFETY LAWS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BARRICADES, SAFETY DEVICES AND CONTROL OF TRAFFIC WITHIN AND AROUND THE CONSTRUCTION AREA.
5. WHEN DISCREPANCIES OCCUR BETWEEN PLANS AND ACTUTAL CONDITIONS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY NORTHERN ENGINEERING, INC. UNTIMELY NOTIFICATION SHALL NEGATE ANY CONTRACTORS CLAIM FOR ADDITIONAL COMPENSATION.
6. ALL MATERIALS FURNISHED ON OR FOR THE PROJECT MUST MEET THE MINIMUM REQUIREMENTS OF THE APPROVING AGENCIES OR AS SET FORTH HEREIN, IF DISCREPANCIES EXIST THE MORE RESTRICTIVE SHALL BE APPLICABLE.
7. CONTRACTORS MUST FURNISH PROOF THAT ALL MATERIALS INSTALLED ON THIS PROJECT MEET THE REQUIREMENTS OF THE SPECIFICATIONS IDENTIFIED HEREIN AND/OR SARATOGA STANDARDS.
8. THE LOCATION OF EXISTING UNDERGROUND OR OVERHEAD UTILITIES ARE APPROXIMATELY SHOWN. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION & ELEVATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND OR OVERHEAD UTILITIES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CALL BLUE STAKES PRIOR TO ANY CONSTRUCTIONS.
9. ALL CONTRACTORS WORKING WITHIN THE PUBLIC ROAD RIGHT-OF-WAY ARE REQUIRED TO SECURE A RIGHT-OF-WAY DIG PERMIT FROM THE CITY OF SARATOGA SPRINGS AT LEAST 24 HOURS PRIOR TO ANY CONSTRUCTION.
10. ALL COSTS FOR TESTING AND/OR RETESTING OF PREVIOUSLY FAILED WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
11. ALL COSTS INCURRED IN CORRECTING DEFICIENT WORK SHALL BE AT THE CONTRACTORS EXPENSE. FAILURE TO CORRECT SUCH WORK WILL BE CAUSE FOR A STOP WORK ORDER AND POSSIBLE TERMINATION.
12. THE CONTRACTOR SHALL REMOVE ALL OBSTRUCTIONS, BOTH ABOVE, AND BELOW GROUND, AS REQUIRED FOR THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS. THIS SHALL INCLUDE CLEARING AND GRUBBING WHICH CONSIST OF CLEARING THE GROUND SURFACE OF ALL TREES, STUMPS, BRUSH, UNDERGROWTH, HEDGES, HEAVY GROWTH OF GRASS OR WEEDS, FENCES, STRUCTURES, DEBRIS RUBBISH, AND SUCH MATERIAL WHICH, IN THE OPINION OF THE ENGINEER, IS UNSUITABLE FOR THE FOUNDATION OF STRUCTURES OR PAVEMENTS. ALL MATERIAL NOT SUITABLE FOR USE ON SITE SHALL BE LEGALY DISPOSED OF OFF-SITE.
13. ALL WORK OF PUBLIC FACILITIES SHALL BE INSPECTED BY THE CITY OF SARATOGA SPRINGS.

WATER

1. THE WATER SYSTEM SHALL BE CONSTRUCTED CONFORMING TO THE STANDARDS SET FORTH IN THE "STATE OF UTAH RULES FOR PUBLIC DRINKING WATER SYSTEMS".
2. WATER DISTRIBUTION MAINS SHALL BE CONSTRUCTED WITH AWWA C900 PIPE. THE PIPE SHALL BE INSTALLED IN WORKMANLIKE MANNER BY PERSONS PROPERLY QUALIFIED TO PERFORM SAID WORK AND SHALL BE IN CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AS APPROVED BY THE CITY ENGINEER.
3. ALL WATER MAINS SHALL HAVE A MINIMUM COVER OF 4 FEET. AFTER INSTALLATION OF THE WATER MAINS, THE TRENCHES SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY (MODIFIED PROCTOR). TO PREVENT FURTHER SETTLEMENT. ALL MAINS SHALL BE LEAK-TESTED, FLUSHED AND SANITIZED BEFORE CONNECTION TO THE MUNICIPAL SYSTEM.
4. HORIZONTAL AND VERTICAL SEPARATION OF CULINARY WATER AND SEWER SHALL BE IN COMPLIANCE WITH THE CITY SARATOGA SPRINGS STANDARDS AND THOSE SET FORTH IN THE STATE CODES.
5. ALL GATE VALVES SHALL HAVE A 200 P.S.I. WORKING PRESSURE RATING AND SHALL BE FLANGED OR M.J. CONNECTED. ALL VALVES SHALL BE RESTRIANED IN CONFORMANCE WITH THE CITY OF SARATOGA SPRINGS SPECIFICATIONS AND CONSTRUCTION STANDARDS.
6. ALL TEES, PLUGS, CAPS, AND BENDS (AND AT OTHER LOCATIONS WHERE UNBALANCED FORCES EXIST) SHALL BE RESTRAINED/ANCHORED BY SUITABLE THRUST BLOCKING AS REQUIRED BY THE CITY OF SARATOGA SPRINGS SPECIFICATIONS AND CONSTRUCTION STANDARDS.
7. THE DISTRIBUTION SYSTEM SHALL BE PRESSURE TESTED IN ACCORDANCE WITH SARATOGA SPRINGS STANDARDS.
8. THE CONTRACTOR SHALL AND REQUEST AN INSPECTION BY THE CITY OF SARATOGA SPRINGS PUBLIC WORKS DEPARTMENT TWENTY-FOUR (24) HOURS IN ADVANCE OF THE BACKFILLING OF WATER LINES.
9. THE CONTRACTOR SHALL FIELD VERIFY ALL VALVE BOX LID ELEVATIONS TO ASSURE THAT SAID LID ELEVATIONS MATCH FINAL STREET GRADES, ALL METER LID ELEVATIONS SHALL MATCH THE EXTENSION OF THE SIDEWALK GRADE.
10. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL SUBMIT A SET OF AS-BUILT DRAWINGS TO THE ENGINEER.
11. RESIDENTIAL WATER SERVICE CONNECTIONS SHALL BE 1" CTS POLYETHYLENE / COPPER WATER PIPE W/ 3/4" METER SETTER & BOX. METER WILL BE FURNISHED AND INSTALLED BY THE CITY OR BUILDING CONTRACTOR.
12. THE SECONDARY WATERLINE SHALL BE CONSTRUCTED TO CONFORM WITH THE STANDARDS SET FORTH IN SARATOGA SPRINGS SPECIFICATION SECTION 02680. ALL SECONDARY PIPE SHALL BE PURPLE PIPE. CONTRACTOR TO INSTALL 4" SECONDARY DRAIN AS PER DETAIL SW-7 CONNECT TO PROPOSED STORM DRAIN.

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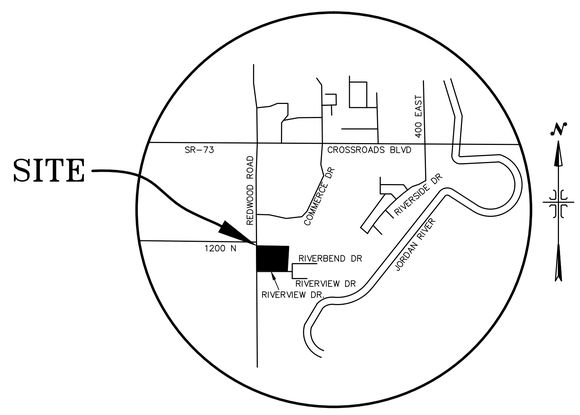


VICINITY MAP

SEWER

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST DESIGN STANDARD, TECHNICAL SPECIFICATIONS AND CONSTRUCTION DRAWINGS APPROVED BY THE CITY OF SARATOGA SPRINGS.
2. SEWER PIPE SHALL BE BELL AND SPIGOT, POLYVINYL CHLORIDE (PVC), SDR 35, ASTM D-3034.
3. SEWER INSPECTIONS WILL BE BY THE CITY OF SARATOGA SPRINGS. THESE INSPECTIONS SHALL NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF PERFORMING THE WORK IN AN ACCEPTABLE MANNER. THE CONTRACTOR SHALL NOTIFY THE CITY 48 HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL REIMBURSE THE CITY OF SARATOGA SPRINGS AT RATES ESTABLISHED BY THE CITY FOR INSPECTION IN EXCESS OF THE NORMAL WORK WEEK, INCLUDING LEGAL HOLIDAYS, AND AT OVERTIME INSPECTION RATES.
4. STUBOUTS FOR SERVICE LINES SHALL BE MARKED IN ACCORDANCE WITH THE CITY STANDARDS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER WHEN THIS IS ACCOMPLISHED SO THAT DESTRUCTION OF SAME IS NOT BACK CHARGED TO THE SEWER CONTRACTOR.
5. PRIOR TO FINAL ACCEPTANCE, AFTER ALL UTILITIES ARE IN AND PRIOR TO PAVING, AN AIR TEST SHALL BE CONDUCTED. THE CONTRACTOR SHALL CONTACT THE CITY OF SARATOGA SPRINGS A MINIMUM OF 24 HOURS PRIOR TO TESTING.
6. ALL MANHOLES SHALL BE CONSTRUCTED TO BE WATER TIGHT AND WITH THE TOP OF CONE LOCATED WITHIN ONE (1) FOOT OF THE FINISHED GRADE. THE SEWER CONTRACTOR SHALL SUPPLY ALL LID ASSEMBLIES AND THE REQUIRED NUMBER OF RISER AND GRADE RINGS. THE SEWER CONTRACTOR SHALL FIELD VERIFY THE ELEVATION OF THE TOP OF THE MANHOLE CONE TO ASSURE THAT RING ELEVATIONS MATCH FINAL STREET GRADES. MANHOLES SHALL HAVE A 12 INCH MAXIMUM IN GRADE RINGS.
7. THE CONTRACTOR SHALL NOTIFY THE DEVELOPER'S ENGINEER AND CITY OF SARATOGA SPRINGS A MINIMUM OF 48 HOURS PRIOR TO COMMENCING CONSTRUCTION OF SANITARY SEWER. SARATOGA SPRINGS CITY SHALL HAVE THE RIGHT TO INSPECT AND REJECT ALL CONSTRUCTION ASSOCIATED WITH SAID SANITARY SEWER CONSTRUCTION.
8. SERVICE STUBOUTS SHALL BE 4" IN DIA. AND WILL BE TO THE POINTS SHOWN ON THE DRAWINGS (5' FROM BLDG.) OR AS MARKED BY THE ENGINEER IN THE FIELD. SERVICE LINES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF SARATOGA SPRINGS STANDARDS. THOSE SEWER SERVICE STUBOUTS BEGINNING AT A MANHOLE IF ANY WILL HAVE THE TOP OF THE FOUR (4) INCH PIPE MATCH THE TOP OF THE EIGHT INCH PIPE. THE SEWER SERVICE MARKER SHALL BE IN PLACE FOR THE FINAL INSPECTION.
9. THE HORIZONTAL SEPARATION OF THE WATER AND SEWER MAINS SHALL BE A MINIMUM OF TEN (10) FEET.
10. GROUNDWATER LEVELS SHALL BE MAINTAINED BELOW THE BOTTOM OF THE TRENCH DURING THE PIPE LAYING AND PIPE JOINING OPERATIONS. BEDDING MATERIAL SHALL CONFORM TO THE CITY OF SARATOGA SPRINGS REQUIREMENTS.
11. THE TRENCH BACKFILL ABOVE THE PIPE ZONE SHALL BE INSPECTED BY THE CITY OF SARATOGA SPRINGS. COMPACTION TESTS FOR SAID BACKFILL SHALL BE CONDUCTED AND THE RESULTS SUBMITTED TO THE CITY FOR FINAL ACCEPTANCE. THE CONTRACTOR IS RESPONSIBLE FOR ALL COMPACTION COSTS.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPACTION TESTING IN ACCORDANCE WITH APWA AND CITY STANDARDS.
13. ALL SEWER TRENCHES SHALL BE BEDDED AND BACKFILLED IN ACCORDANCE WITH CITY STANDARDS.
14. THE CONTRACTOR SHALL LEAVE THE EXCAVATION FOR THE UPSTREAM END OF ALL SERVICE LINES OPEN FOR FIELD VERIFICATION OF THE INVERT ELEVATION BY THE INSPECTOR. THE CONTRACTOR SHALL NOT BACKFILL THE ENDS OF SERVICE LINES UNTIL HE HAS OBTAINED APPROVAL FROM THE CITY INSPECTOR.
15. THE CONTRACTOR SHALL PROVIDE THE CITY INSPECTOR WITH "CUT SHEETS" FOR THE STAKING PROVIDED FOR CONSTRUCTION OF THE SANITARY SEWER. THESE "CUT SHEETS" SHALL BE PROVIDED TO THE CITY PRIOR TO START OF CONSTRUCTION. ADDITIONALLY, A BENCH MARK SHALL BE PROVIDED TO THE CITY BY THE OWNER TO VERIFY CONSTRUCTION.
16. THE CONTRACTOR SHALL CONSTRUCT THE SANITARY SEWER IN ACCORDANCE WITH THE STAMPED PLANS APPROVED BY THE SARATOGA SPRINGS SEWER DISTRICT. THESE PLANS WILL BE PROVIDED TO THE CONTRACTOR BY THE PROJECT INSPECTOR PRIOR TO CONSTRUCTION. WORK SHALL NOT BE DONE WITHOUT THE CURRENT SET OF APPROVED PLANS.

ROADWAY/PARKING/STORM DRAIN

1. INSPECTION OF WORK WITHIN THE PUBLIC RIGHT-OF-WAY AND PUBLIC FACILITES OUTSIDE THE THE PUBLIC RIGHT-OF-WAY SHALL BE BY THE CITY OF SARATOGA SPRINGS.
2. EXISTING A.C. PAVEMENT SHALL BE CUT WITH NEAT, STRAIGHT LINES PARALLEL TO OR PERPENDICULAR TO THE STREET AND AT LEAST 1 FOOT FROM THE EXISTING EDGE OF PAVEMENT. ALL EXPOSED EDGES SHALL BE TACK COATED WITH EMULSION PRIOR TO PAVING.
3. ALL TOPS OF VALVE BOXES AND SEWER MANHOLES SHALL BE SET FLUSH WITH THE SLOPE OF THE FINISHED STREET GRADES. THE ROADWAY CONTRACTOR SHALL INSTALL AND ADJUST ALL SPACERS, GRADE RINGS, MANHOLE RINGS AND LIDS. CONCRETE COLLARS SHALL BE INSTALLED IN ACCORDANCE WITH SARATOGA SPRINGS CITY STANDARDS & SPECIFICATIONS. CONTRACTOR SHALL NOTIFY SARATOGA SPRINGS CITY AND THE ENGINEER 24 HOURS PRIOR TO POURING CONCRETE COLLARS.
4. ALL WATER VALVES SHALL BE PLACED SO AS NOT TO CONFLICT WITH ANY CONCRETE CURB, GUTTER, VALLEY GUTTER, OR SIDEWALK IMPROVEMENT.
5. ALL WATER METERS AND FIRE HYDRANTS ARE TO BE LOCATED OUTSIDE OF THE ROADWAY. PROVIDE AT LEAST ONE (1) FOOT (MINIMUM) SEPARATION BETWEEN ANY BACK OF SIDEWALK (OR CURB IF NO SIDEWALK) AND THE LEADING EDGE OF ANY FIRE HYDRANT.
6. ALL EARTHWORK MATERIALS PLACED AS FILL OR BACKFILL SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH THE CITY OF SARATOGA SPRINGS STANDARD SPECIFICATION FOR CONSTRUCTION.
7. OVER EXCAVATION AND ADDITIONAL GRANULAR BACKFILL MAY BE REQUIRED IN HIGH GROUNDWATER AREAS AS DETERMINED BY THE CITY OF SARATOGA SPRINGS.
8. IN AN EFFORT TO ELIMINATE COLLAPSIBLE SOILS WITHIN DEDICATED ROADWAYS, A GEOTECHNICAL ENGINEER MAY BE NEEDED TO VERIFY SUB-BASE CONDITIONS PRIOR TO THE PLACEMENT OF GRANULAR FILL.
9. UTILITY CONDUITS SHALL BE INSTALLED AT EVERY INTERSECTION PER THE CITY OF SARATOGA SPRINGS CONSTRUCTION STANDARDS.

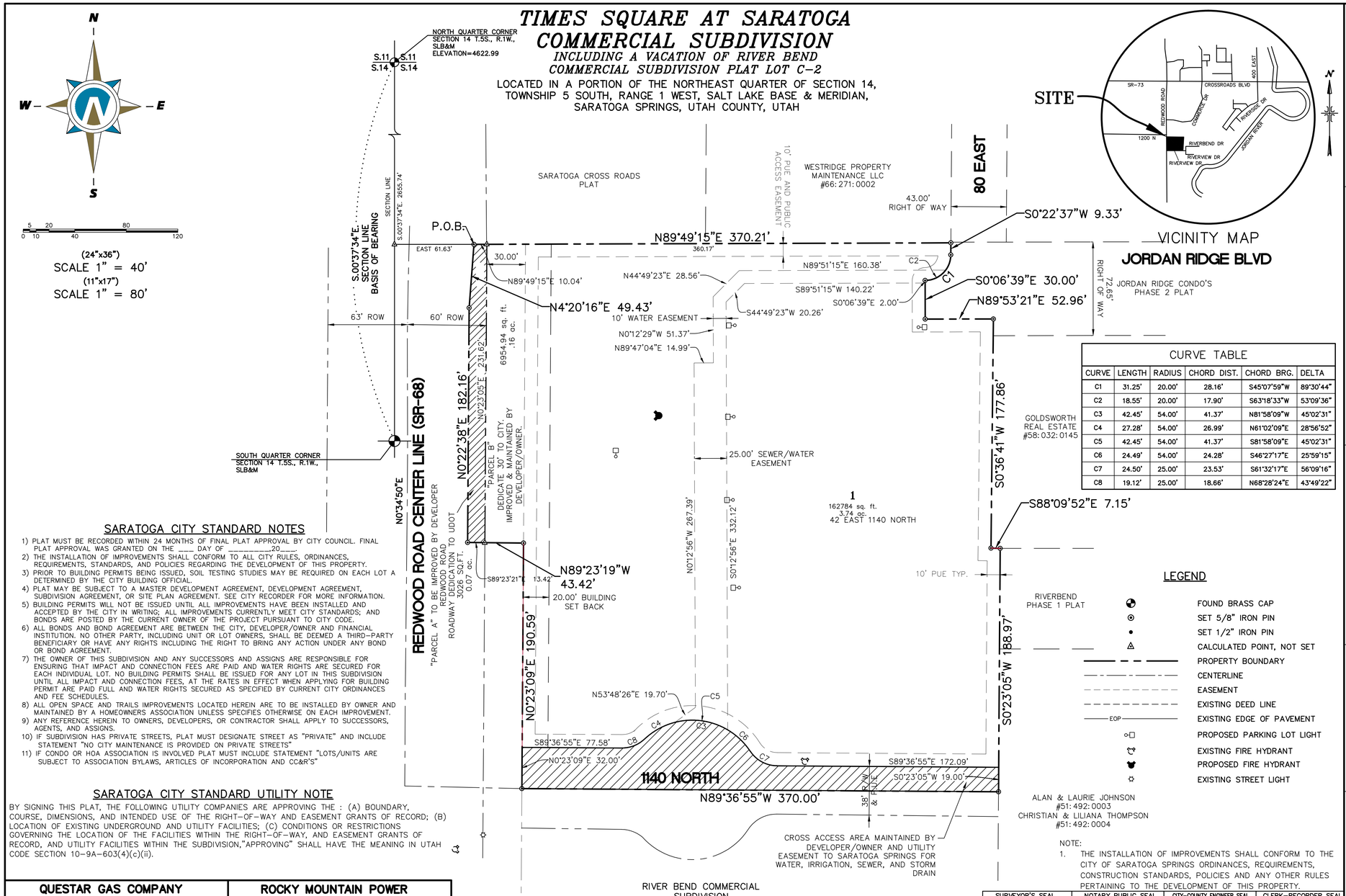
Northern ENGINEERING INC
ENGINEERING-LAND PLANNING
CONSTRUCTION MANAGEMENT

1040 E. 800 N.
OREM, UTAH 84097
(801) 802-8992

TIMES SQUARE AT SARATOGA COMMERCIAL SUBDIVISION

INCLUDING A VACATION OF RIVER BEND COMMERCIAL SUBDIVISION PLAT LOT C-2

LOCATED IN A PORTION OF THE NORTHEAST QUARTER OF SECTION 14, TOWNSHIP 5 SOUTH, RANGE 1 WEST, SALT LAKE BASE & MERIDIAN, SARATOGA SPRINGS, UTAH COUNTY, UTAH



VICINITY MAP

JORDAN RIDGE BLVD

CURVE TABLE

CURVE	LENGTH	RADIUS	CHORD DIST.	CHORD BRG.	DELTA
C1	31.25'	20.00'	28.16'	S45°07'59"W	89°30'44"
C2	18.55'	20.00'	17.90'	S63°18'33"W	53°09'36"
C3	42.45'	54.00'	41.37'	N81°58'09"W	45°02'31"
C4	27.28'	54.00'	26.99'	N61°02'09"E	28°56'52"
C5	42.45'	54.00'	41.37'	S81°58'09"E	45°02'31"
C6	24.49'	54.00'	24.28'	S46°27'17"E	25°59'15"
C7	24.50'	25.00'	23.53'	S61°32'17"E	56°09'16"
C8	19.12'	25.00'	18.66'	N68°28'24"E	43°49'22"

LEGEND

- FOUND BRASS CAP
- SET 5/8" IRON PIN
- SET 1/2" IRON PIN
- CALCULATED POINT, NOT SET
- PROPERTY BOUNDARY
- CENTERLINE
- EASEMENT
- EXISTING DEED LINE
- EXISTING EDGE OF PAVEMENT
- PROPOSED PARKING LOT LIGHT
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- EXISTING STREET LIGHT

NOTE:

1. THE INSTALLATION OF IMPROVEMENTS SHALL CONFORM TO THE CITY OF SARATOGA SPRINGS ORDINANCES, REQUIREMENTS, CONSTRUCTION STANDARDS, POLICIES AND ANY OTHER RULES PERTAINING TO THE DEVELOPMENT OF THIS PROPERTY.

SARATOGA CITY STANDARD NOTES

1) PLAT MUST BE RECORDED WITHIN 24 MONTHS OF FINAL PLAT APPROVAL BY CITY COUNCIL. FINAL PLAT APPROVAL WAS GRANTED ON THE ____ DAY OF _____20____.
2) THE INSTALLATION OF IMPROVEMENTS SHALL CONFORM TO ALL CITY RULES, ORDINANCES, REQUIREMENTS, STANDARDS, AND POLICIES REGARDING THE DEVELOPMENT OF THIS PROPERTY.
3) PRIOR TO BUILDING PERMITS BEING ISSUED, SOIL TESTING STUDIES MAY BE REQUIRED ON EACH LOT A DETERMINED BY THE CITY BUILDING OFFICIAL.
4) PLAT MAY BE SUBJECT TO A MASTER DEVELOPMENT AGREEMENT, DEVELOPMENT AGREEMENT, SUBDIVISION AGREEMENT, OR SITE PLAN AGREEMENT. SEE CITY RECORDER FOR MORE INFORMATION.
5) BUILDING PERMITS WILL NOT BE ISSUED UNTIL ALL IMPROVEMENTS HAVE BEEN INSTALLED AND ACCEPTED BY THE CITY IN WRITING; ALL IMPROVEMENTS CURRENTLY MEET CITY STANDARDS; AND BONDS ARE POSTED BY THE CURRENT OWNER OF THE PROJECT PURSUANT TO CITY CODE.
6) ALL BONDS AND BOND AGREEMENT ARE BETWEEN THE CITY, DEVELOPER/OWNER AND FINANCIAL INSTITUTION. NO OTHER PARTY, INCLUDING UNIT OR LOT OWNERS, SHALL BE DEEMED A THIRD-PARTY BENEFICIARY OR HAVE ANY RIGHTS INCLUDING THE RIGHT TO BRING ANY ACTION UNDER ANY BOND OR BOND AGREEMENT.
7) THE OWNER OF THIS SUBDIVISION AND ANY SUCCESSORS AND ASSIGNS ARE RESPONSIBLE FOR ENSURING THAT IMPACT AND CONNECTION FEES ARE PAID AND WATER RIGHTS ARE SECURED FOR EACH INDIVIDUAL LOT. NO BUILDING PERMITS SHALL BE ISSUED FOR ANY LOT IN THIS SUBDIVISION UNTIL ALL IMPACT AND CONNECTION FEES, AT THE RATES IN EFFECT WHEN APPLYING FOR BUILDING PERMIT ARE PAID FULL AND WATER RIGHTS SECURED AS SPECIFIED BY CURRENT CITY ORDINANCES AND FEE SCHEDULES.
8) ALL OPEN SPACE AND TRAILS IMPROVEMENTS LOCATED HEREIN ARE TO BE INSTALLED BY OWNER AND MAINTAINED BY A HOMEOWNERS ASSOCIATION UNLESS SPECIFIES OTHERWISE ON EACH IMPROVEMENT.
9) ANY REFERENCE HEREIN TO OWNERS, DEVELOPERS, OR CONTRACTOR SHALL APPLY TO SUCCESSORS, AGENTS, AND ASSIGNS.
10) IF SUBDIVISION HAS PRIVATE STREETS, PLAT MUST DESIGNATE STREET AS "PRIVATE" AND INCLUDE STATEMENT "NO CITY MAINTENANCE IS PROVIDED ON PRIVATE STREETS"
11) IF CONDO OR HOA ASSOCIATION IS INVOLVED PLAT MUST INCLUDE STATEMENT "LOTS/UNITS ARE SUBJECT TO ASSOCIATION BYLAWS, ARTICLES OF INCORPORATION AND CC&R'S"

SARATOGA CITY STANDARD UTILITY NOTE

BY SIGNING THIS PLAT, THE FOLLOWING UTILITY COMPANIES ARE APPROVING THE : (A) BOUNDARY, COURSE, DIMENSIONS, AND INTENDED USE OF THE RIGHT-OF-WAY AND EASEMENT GRANTS OF RECORD; (B) LOCATION OF EXISTING UNDERGROUND AND UTILITY FACILITIES; (C) CONDITIONS OR RESTRICTIONS GOVERNING THE LOCATION OF THE FACILITIES WITHIN THE RIGHT-OF-WAY, AND EASEMENT GRANTS OF RECORD, AND UTILITY FACILITIES WITHIN THE SUBDIVISION,"APPROVING" SHALL HAVE THE MEANING IN UTAH CODE SECTION 10-9A-603(4)(c)(ii).

QUESTAR GAS COMPANY
APPROVED THIS _____DAY OF 20___A.D.
QUESTAR GAS COMPANY

ROCKY MOUNTAIN POWER
APPROVED THIS _____DAY OF 20 A.D. ___
ROCKY MOUNTAIN POWER

COMCAST CABLE TELEVISION
APPROVED THIS _____DAY OF 20___A.D.
COMCAST CABLE TEVEVISION

CENTURY LINK
APPROVED THIS _____DAY OF 20 A.D. ___
CENTURY LINK

SURVEYOR'S SEAL — PROFESSIONAL LAND SURVEYOR No. 172762 KENNETH E. BARNEY STATE OF UTAH

NOTARY PUBLIC SEAL | CITY-COUNTY ENGINEER SEAL | CLERK-RECORDER SEAL

Northern ENGINEERING INC
ENGINEERING-LAND PLANNING
CONSTRUCTION MANAGEMENT
1040 E. 800 N.
OREM, UTAH 84097
(801) 802-8992

FIRE CHIEF APPROVAL
APPROVED BY THE FIRE CHIEF ON
THIS _____DAY OF 20___A.D.
CITY FIRE CHIEF

PLANNING COMMISSION APPROVAL
APPROVED BY THE PLANNING COMMISSION ON
THIS _____DAY OF 20___A.D.
CHAIRMAN, PLANNING COMMISSION

SARATOGA SPRINGS ENGINEER APPROVAL
APPROVED BY THE CITY ENGINEER ON
THIS _____DAY OF 20___A.D.
CITY ENGINEER

SARATOGA SPRINGS CITY ATTORNEY
APPROVED BY SARATOGA SPRINGS ATTORNEY ON
THIS _____DAY OF 20___A.D.
SARATOGA SPRINGS ATTORNEY

LEHI CITY POST OFFICE
APPROVED BY POST OFFICE REPRESENTATIVE ON
THIS _____DAY OF 20___A.D.
LEHI CITY POST OFFICE REPRESENTATIVE

SURVEYOR'S CERTIFICATE

I, KENNETH E. BARNEY, DO HEREBY CERTIFY THAT I AM A REGISTERED LAND SURVEYOR AND THAT I HOLD A LICENSE, CERTIFICATE NO. 172762, IN ACCORDANCE WITH THE PROFESSION ENGINEERS AND LAND SURVEYORS LICENSING ACT FOUND IN TITLE 58, CHAPTER 22, OF THE UTAH CODE. I FURTHER CERTIFY THAT BY AUTHORITY OF THE OWNER, I HAVE MADE A SURVEY OF THE TRACT OF LAND SHOWN ON THIS PLAT AND DESCRIBED BELOW, HAVE SUBDIVIDED SAID TRACT OF LAND INTO LOTS, STREETS, AND EASEMENTS, HAVE COMPLETED A SURVEY OF THE PROPERTY DESCRIBED ON THIS PLAT IN ACCORDANCE WITH UTAH CODE SECTION 17-23-17, HAVE VERIFIED ALL MEASUREMENTS, AND HAVE PLACED MONUMENTS AS REPRESENTED ON THE PLAT. I FURTHER CERTIFY THAT EVERY EXISTING RIGHT-OF-WAY AND EASEMENT GRANT OF RECORD FOR UNDERGROUND FACILITIES, AS DEFINED IN UTAH CODE SECTION 54-8a-2, AND FOR OTHER UTILITY FACILITIES, IS ACCURATELY DESCRIBED ON THIS PLAT, AND THAT THIS PLAT IS TRUE AND CORRECT. I ALSO CERTIFY THAT I HAVE FILED, OR WILL FILE WITHIN 90 DAYS OF THE RECORDATION OF THIS PLAT, A MAP OF THE SURVEY I HAVE COMPLETED WITH THE UTAH COUNTY SURVEYOR.

DATE _____ KENNETH E. BARNEY, P.L.S. _____

BOUNDARY DESCRIPTION

A PARCEL OF LAND LOCATED IN THE NORTHEAST QUARTER OF SECTION 14, TOWNSHIP 5 SOUTH, RANGE 1 WEST, SLB&M, SARATOGA SPRINGS, UTAH MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A BRASS CAP MARKING THE NORTH QUARTER CORNER OF SAID SECTION 14; THENCE S.00°37'34"E. A DISTANCE OF 2655.74 FEET ALONG THE SECTION LINE; THENCE EAST A DISTANCE OF 61.63 FEET TO THE REAL POINT OF BEGINNING:

THENCE N.89°49'15"E. A DISTANCE OF 370.21 FEET; TO A POINT ON THE WESTERLY BOUNDARY OF THE JORDAN RIDGE CONDOMINIUM PHASE 2 PLAT AS RECORDED IN THE OFFICIAL RECORDED OS THE UTAH COUNTY RECORDER'S OFFICE; THENCE S.00°22'37"W. A DISTANCE OF 9.33 FEET ALONG SAID PLAT TO A POINT OF CURVATURE OF A 20.00-FOOT RADIUS TANGENT CURVE TO THE RIGHT; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 31.25 FEET ALONG SAID PLAT, SAID CURVE HAVING A CENTRAL ANGLE OF 89°30'44" AND A CHORD THAT BEARS S.45°07'59"W. A DISTANCE OF 28.16 FEET; THENCE S.00°06'39"E. A DISTANCE OF 30.00 FEET; THENCE N.89°53'21"E. A DISTANCE OF 52.96 FEET; THENCE S.00°36'41"W. A DISTANCE OF 177.86 FEET; THENCE S.88°09'52"E. A DISTANCE OF 7.15 FEET; THENCE S.00°23'05"W. A DISTANCE OF 188.97 FEET; THENCE N.89°36'55"W. A DISTANCE OF 370.00 FEET; THENCE N.00°23'09"E. A DISTANCE OF 190.59 FEET; THENCE N.89°23'19"W. A DISTANCE OF 43.42 FEET; THENCE N.00°22'38"E. A DISTANCE OF 182.16 FEET; THENCE N.04°20'16"E. A DISTANCE OF 49.43 FEET TO THE POINT OF BEGINNING. TOTAL AREA CONTAINED THEREIN BEING 162784 sq.ft OR 3.74 ACRES OF LAND MORE OR LESS.

OWNER'S DEDICATION

KNOW ALL MEN BY THESE PRESENTS THAT_____, THE_____ UNDERSIGNED OWNER(S) OF THE ABOVE DESCRIBED TRACT OF LAND HAVING CAUSED SAME TO BE SUBDIVIDED INTO LOTS AND STREETS TO BE HEREAFTER KNOWN AS TIMES SQUARE AT SARATOGA COMMERCIAL SUBDIVISION DO HEREBY DEDICATE FOR THE PERPETUAL USE OF THE PUBLIC AND/OR PARCELS OF LAND, EASEMENTS, RIGHT-OF-WAY, AND PUBLIC AMENITIES SHOWN ON THIS PLAT AS INTENDED FOR PUBLIC AND/OR CITY USE. THE OWNER(S) VOLUNTARILY DEFEND, INDEMNIFY, AND SAVE HARMLESS THE CITY AGAINST ANY EASEMENTS OR OTHER ENCUMBRANCE ON A DEDICATED STREET WHICH WILL INTERFERE WITH THE CITY'S USE. MAINTENANCE, AND OPERATION OF THE STREET. THE OWNER(S) VOLUNTARILY DEFEND, INDEMNIFY, AND HOLD HARMLESS THE CITY FROM ANY DAMAGE CLAIMED BY PERSONS WITHIN OR WITHOUT THIS SUBDIVISION TO HAVE BEEN CAUSED BY ALTERATION OF THE GROUND SURFACE, VEGETATION, DRAINAGE, OR SUB-SURFACE WATER FLOWS WITHIN THIS SUBDIVISION OR BY ESTABLISHMENT OR CONSTRUCTION OF THE ROADS WITHIN THIS SUBDIVISION.

IN WITNESS HEREOF _____ HAVE HEREUNTO SET ____ THIS ____ DAY OF _____. A.D. 20 ____.

_____ _____
_____ _____

ACKNOWLEDGMENT

STATE OF UTAH } S.S.
COUNTY OF UTAH

ON THE _____ DAY OF _____ , A.D. 20___.
PERSONALLY APPEARED BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC, IN AND FOR THE COUNTY OF UTAH, IN THE STATE OF UTAH, THE SIGNERS OF THE ABOVE DEDICATION, WHO DULY ACKNOWLEDGED TO ME THAT THEY EXECUTED THE SAME FREELY, VOLUNTARILY, AND IN AUTHORIZED CAPACITIES AND WHO PROVED TO ME ON THE BASIS OF SATIFACTORY EVIDENCE TO BE THE PERSONS WHOSE NAMES ARE SUBSCRIBED HEREON.

COMMISSION NUMBER: _____ BY: _____
MY COMMISSION EXPIRES: _____ PRINTED NAME: _____

ACCEPTANCE BY LEGISLATIVE BODY

THE MAYOR AND CITY COUNCIL OF THE CITY OF SARATOGA SPRINGS, COUNTY OF UTAH, HEREBY APPROVES THIS ROADWAY DEDICATION PLAT AND ACCEPTS THE DEDICATION OF ALL STREETS AND OTHER PUBLIC AREAS OF LAND INTENDED FOR PUBLIC PURPOSES AND FOR PERPETUAL USE.
THIS_____ DAY OF_____ A.D. 20___ .

_____ _____
_____ _____
_____ _____
_____ ATTEST _____
MAYOR CITY RECORDER (SEE SEAL)

TIMES SQUARE AT SARATOGA COMMERCIAL SUBDIVISION

INCLUDING A VACATION OF RIVER BEND COMMERCIAL SUBDIVISION PLAT LOT C-2

LOCATED IN A PORTION OF THE NORTHEAST QUARTER OF SECTION 14, TOWNSHIP 5 SOUTH, RANGE 1 WEST, SALT LAKE BASE & MERIDIAN,

SARATOGA SPRINGS UTAH COUNTY, UTAH
SCALE: 1" = 40 FEET

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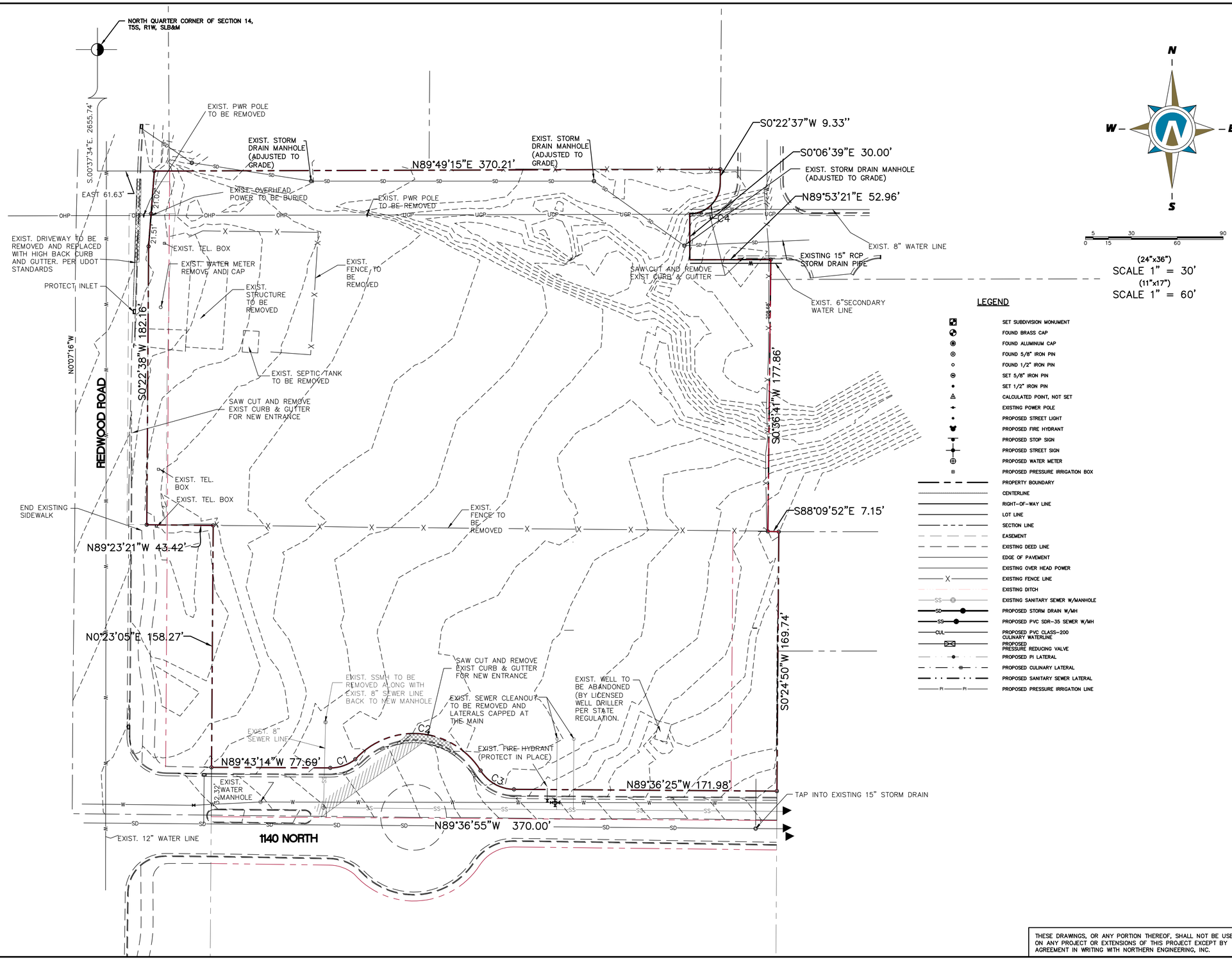

NO.	REVISIONS	DATE	BY	APP.

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Northern ENGINEERING INC
ENGINEERING–LAND PLANNING
CONSTRUCTION MANAGEMENT

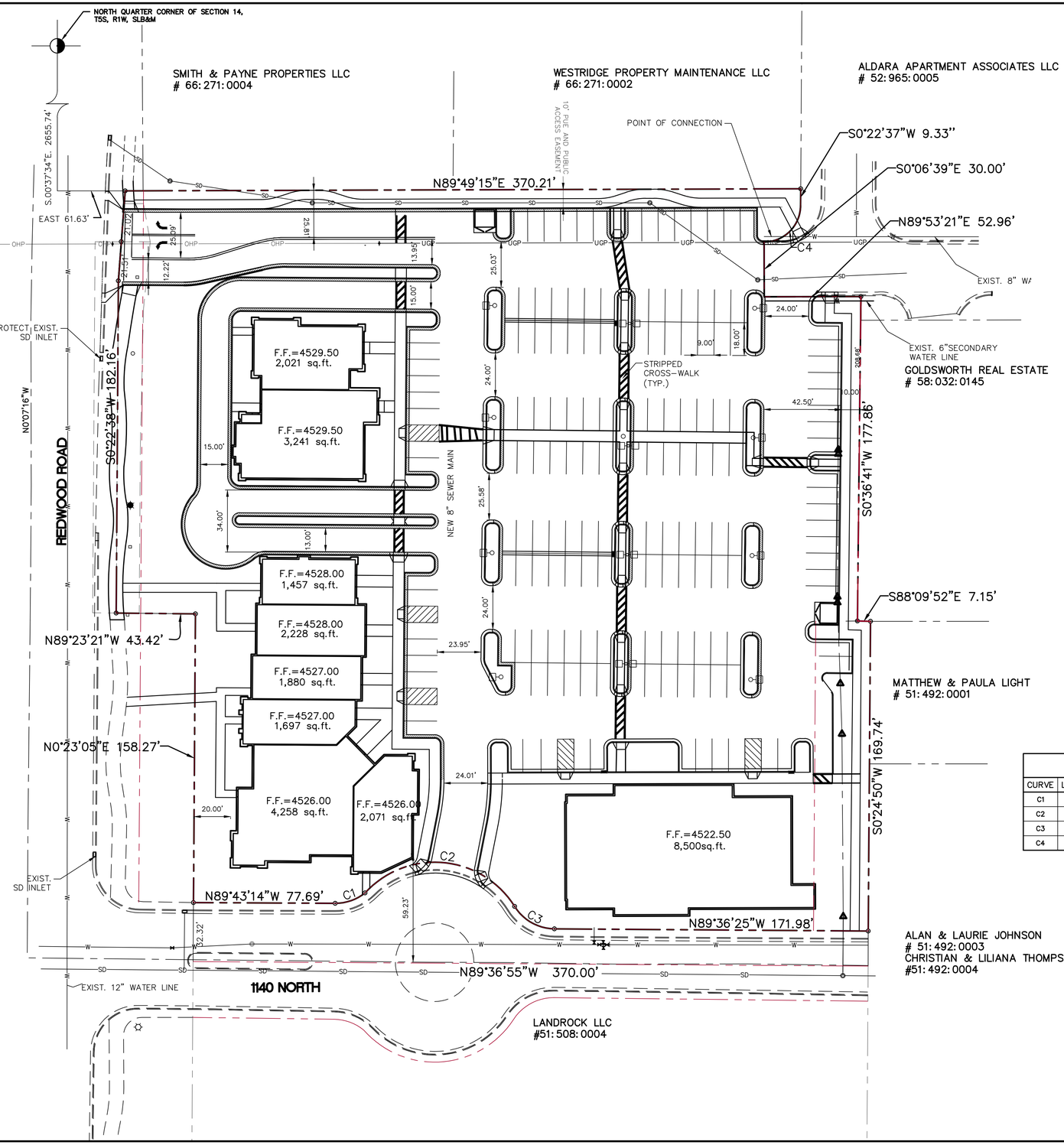
TIMES SQUARE AT SARATOGA
PROJECT LOCATED IN SARATOGA SPRINGS, UTAH
NW 1/4 SECTION 23, T 5S R 1W SLB&M
AT 1140 NORTH REDWOOD ROAD

DEMOLITION PLAN

NORTHERN ENGINEERING INC
1040 EAST 800 NORTH
OREM, UTAH 84097
801.802.8992
fax: 801.802.8993

DATE: 11/23/15
SCALE: 1" = 30 FT
JOB NO: 3-11-037-00
DESIGNED BY:
DRAWN BY: KEB
SHEET NAME:
SHEET: DM-01

THESE DRAWINGS, OR ANY PORTION THEREOF, SHALL NOT BE USED ON ANY PROJECT OR EXTENSIONS OF THIS PROJECT EXCEPT BY AGREEMENT IN WRITING WITH NORTHERN ENGINEERING, INC.



LEGEND

- PROPOSED PARKING LOT LIGHT
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- EXISTING STREET LIGHT
- PROPOSED STREET LIGHT

N
W E
S

0 5 15 30 60 90

(24"x36")
SCALE 1" = 30'
(11"x17")
SCALE 1" = 60'

BOUNDARY DESCRIPTION

A PARCEL OF LAND LOCATED IN THE NORTHEAST QUARTER OF SECTION 14, TOWNSHIP 5 SOUTH, RANGE 1 WEST, SLB&M, SARATOGA SPRINGS, UTAH MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A BRASS CAP MARKING THE NORTH QUARTER CORNER OF SAID SECTION 14; THENCE S.00°37'34"E. A DISTANCE OF 2655.74 FEET ALONG THE SECTION LINE; THENCE EAST A DISTANCE OF 61.63 FEET TO THE REAL POINT OF BEGINNING:

THENCE N.89°49'15"E. A DISTANCE OF 370.21 FEET; TO A POINT ON THE WESTERLY BOUNDARY OF THE JORDAN RIDGE CONDOMINIUM PHASE 2 PLAT AS RECORDED IN THE OFFICIAL RECORDED OS THE UTAH COUNTY RECORDER'S OFFICE; THENCE S.00°22'37"W. A DISTANCE OF 9.33 FEET ALONG SAID PLAT TO A POINT OF CURVATURE OF A 20.00-FOOT RADIUS TANGENT CURVE TO THE RIGHT; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 31.24 FEET ALONG SAID PLAT, SAID CURVE HAVING A CENTRAL ANGLE OF 89°30'44" AND A CHORD THAT BEARS S.45°07'59"W. A DISTANCE OF 28.16 FEET; THENCE S.00°06'39"E. A DISTANCE OF 30.00 FEET; THENCE N.89°53'21"E. A DISTANCE OF 52.96 FEET; THENCE S.00°36'41"W. A DISTANCE OF 177.86 FEET; THENCE S.88°09'52"E. A DISTANCE OF 7.15 FEET; THENCE S.00°23'05"W. A DISTANCE OF 188.97 FEET; THENCE N.89°36'55"W. A DISTANCE OF 370.00 FEET; THENCE N.00°23'09"E. A DISTANCE OF 190.59 FEET; THENCE N.89°23'19"W. A DISTANCE OF 43.42 FEET; THENCE N.00°22'38"E. A DISTANCE OF 182.16 FEET; THENCE N.04°20'16"E. A DISTANCE OF 49.43 FEET TO THE POINT OF BEGINNING. TOTAL AREA CONTAINED THEREIN BEING 162784 sq.ft OR 3.74 ACRES OF LAND MORE OR LESS.

CURVE TABLE

CURVE	LENGTH	RADIUS	CHORD DIST.	CHORD BRG.	DELTA
C1	17.62'	26.02'	17.29'	N70°51'21"E	38°48'31"
C2	95.26'	51.68'	82.33'	S84°50'11"E	105°36'58"
C3	26.11'	26.14'	25.04'	S60°38'31"E	57°13'37"
C4	31.24'	20.00'	28.16'	S45°07'59"W	89°30'44"

PARKING SUMMARY

HARDWARE	8,500 sq.ft.	40 SPACES
RETAIL	20,553 sq.ft	122 SPACES
DISABLED PARKING		10 SPACES
		172 SPACES
PARKING PROVIDED		172 SPACES

LAND SUMMARY

BUILDINGS	29,053 sq.ft.
LANDSCAPE	26,184 sq.ft.
SIDEWALKS/PARKING DRIVEWAYS	96,622 sq.ft.
TOTAL:	151,859 sq.ft.

THESE DRAWINGS, OR ANY PORTION THEREOF, SHALL NOT BE USED ON ANY PROJECT OR EXTENSIONS OF THIS PROJECT EXCEPT BY AGREEMENT IN WRITING WITH NORTHERN ENGINEERING, INC.

NO.	REVISIONS	DATE	BY	APP.

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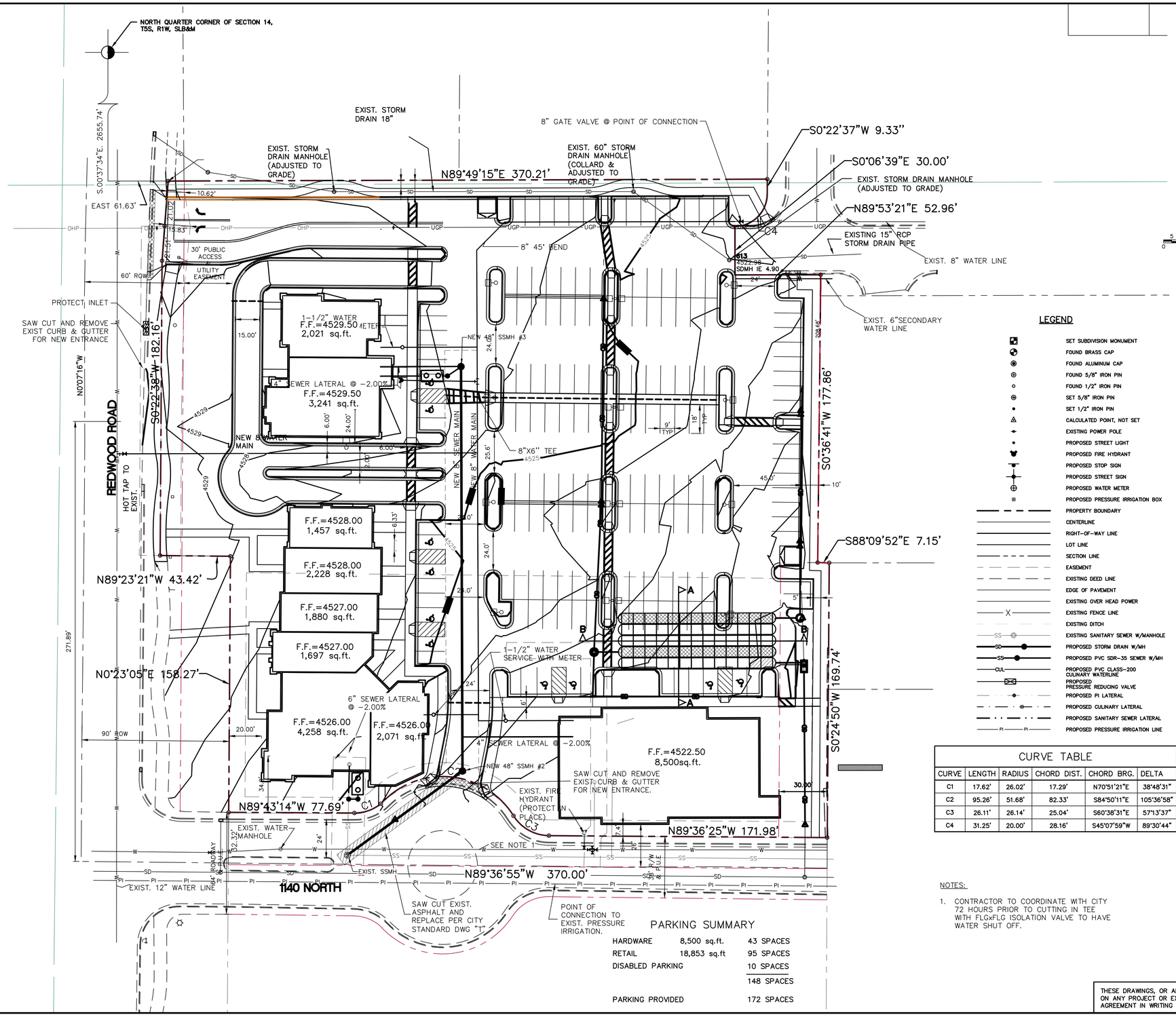
Northern ENGINEERING INC
ENGINEERING-LAND PLANNING
CONSTRUCTION MANAGEMENT

TIMES SQUARE AT SARATOGA
PROJECT LOCATED IN SARATOGA SPRINGS, UTAH
NW 1/4 SECTION 23 T 5S R 1W SLB&M
AT 1140 NORTH REDWOOD ROAD

OVERALL SITE PLAN

NORTHERN ENGINEERING INC
801.802.8992
fax:801.802.8993
1040 EAST 800 NORTH
OREM, UTAH 84097

DATE: 11/23/15
SCALE: 1" = 30 FT
JOB NO.: 3-11-037-00
DESIGNED BY:
DRAWN BY: KEB
SHEET NAME:
SHEET: SP-01



LEGEND

- SET SUBDIVISION MONUMENT
- FOUND BRASS CAP
- FOUND ALUMINUM CAP
- FOUND 5/8" IRON PIN
- FOUND 1/2" IRON PIN
- SET 5/8" IRON PIN
- SET 1/2" IRON PIN
- CALCULATED POINT, NOT SET
- EXISTING POWER POLE
- PROPOSED STREET LIGHT
- PROPOSED FIRE HYDRANT
- PROPOSED STOP SIGN
- PROPOSED STREET SIGN
- PROPOSED WATER METER
- PROPOSED PRESSURE IRRIGATION BOX
- PROPERTY BOUNDARY
- CENTERLINE
- RIGHT-OF-WAY LINE
- LOT LINE
- SECTION LINE
- EASEMENT
- EXISTING DEED LINE
- EDGE OF PAVEMENT
- EXISTING OVER HEAD POWER
- EXISTING FENCE LINE
- EXISTING DITCH
- EXISTING SANITARY SEWER W/MANHOLE
- PROPOSED STORM DRAIN W/MH
- PROPOSED PVC SDR-35 SEWER W/MH
- PROPOSED PVC CLASS-200 CULINARY WATERLINE
- PROPOSED PRESSURE REDUCING VALVE
- PROPOSED PI LATERAL
- PROPOSED CULINARY LATERAL
- PROPOSED SANITARY SEWER LATERAL
- PROPOSED PRESSURE IRRIGATION LINE

CURVE TABLE

CURVE	LENGTH	RADIUS	CHORD DIST.	CHORD BRG.	DELTA
C1	17.62'	26.02'	17.29'	N70°51'21"E	38°48'31"
C2	95.26'	51.68'	82.33'	S84°50'11"E	105°36'58"
C3	26.11'	26.14'	25.04'	S60°38'31"E	57°13'37"
C4	31.25'	20.00'	28.16'	S45°07'59"W	89°30'44"

PARKING SUMMARY

HARDWARE	8,500 sq.ft.	43 SPACES
RETAIL	18,853 sq.ft	95 SPACES
DISABLED PARKING		10 SPACES
		148 SPACES
PARKING PROVIDED		172 SPACES

NOTES:

1. CONTRACTOR TO COORDINATE WITH CITY 72 HOURS PRIOR TO CUTTING IN TEE WITH FLGxFLG ISOLATION VALVE TO HAVE WATER SHUT OFF.

THESE DRAWINGS, OR ANY PORTION THEREOF, SHALL NOT BE USED ON ANY PROJECT OR EXTENSIONS OF THIS PROJECT EXCEPT BY AGREEMENT IN WRITING WITH NORTHERN ENGINEERING, INC.

NO.	REVISIONS	DATE	BY	APP.

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Northern ENGINEERING INC
ENGINEERING-LAND PLANNING
CONSTRUCTION MANAGEMENT

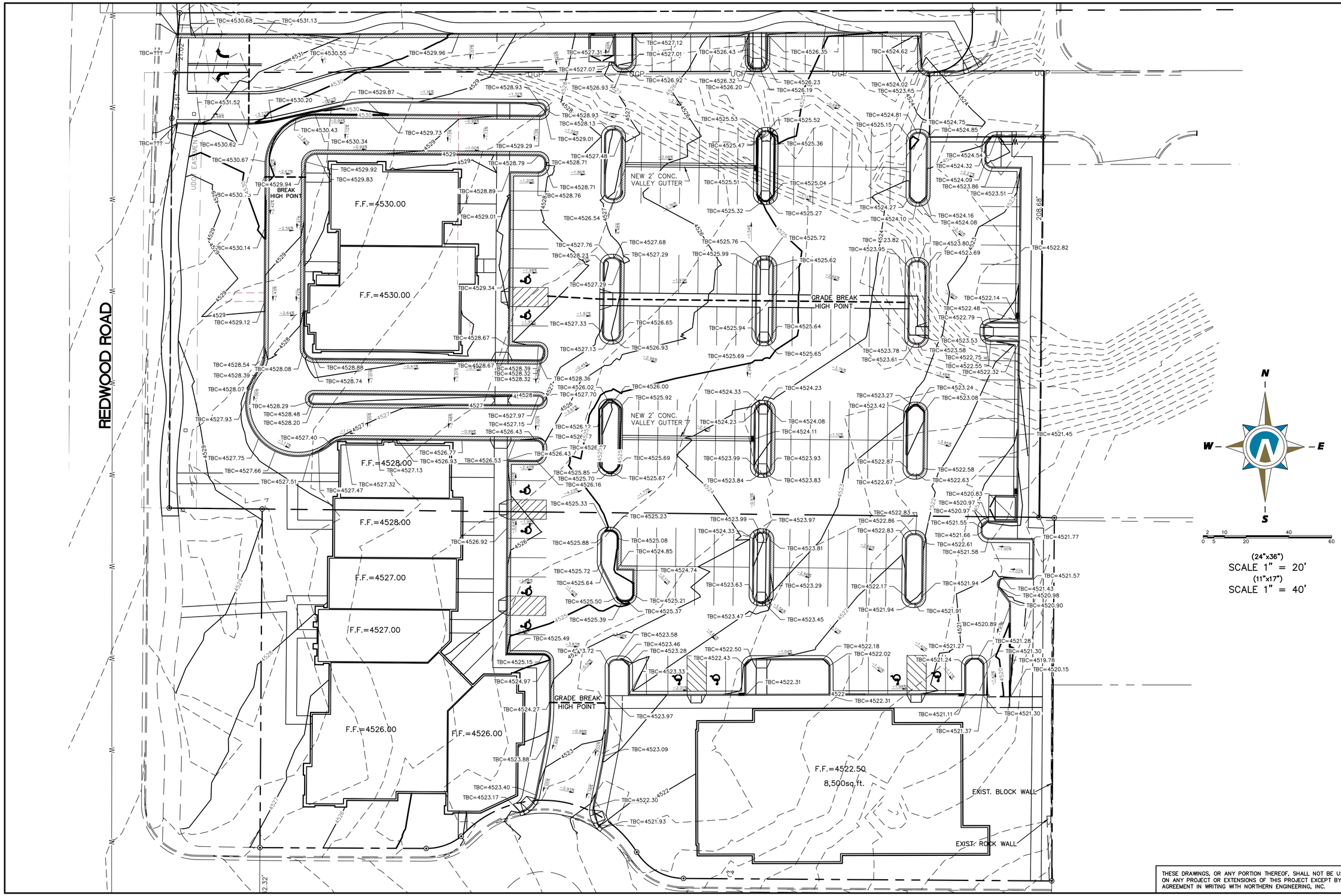
TIMES SQUARE AT SARATOGA

PROJECT LOCATED IN SARATOGA SPRINGS, UTAH
NW 1/4 SECTION 23, T5S R 1W SLB&M
AT 1140 NORTH REDWOOD ROAD

OVERALL UTILTIY PLAN

NORTHERN ENGINEERING INC
1040 EAST 800 NORTH
OREM, UTAH 84097
801.802.8992
fax:801.802.8993

DATE: 11/23/15
SCALE: 1" = 30 FT
JOB NO.: 3-11-037-00
DESIGNED BY:
DRAWN BY: KEB
SHEET NAME:
SHEET: UT-01



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NO.	REVISIONS	DATE	BY	APP.

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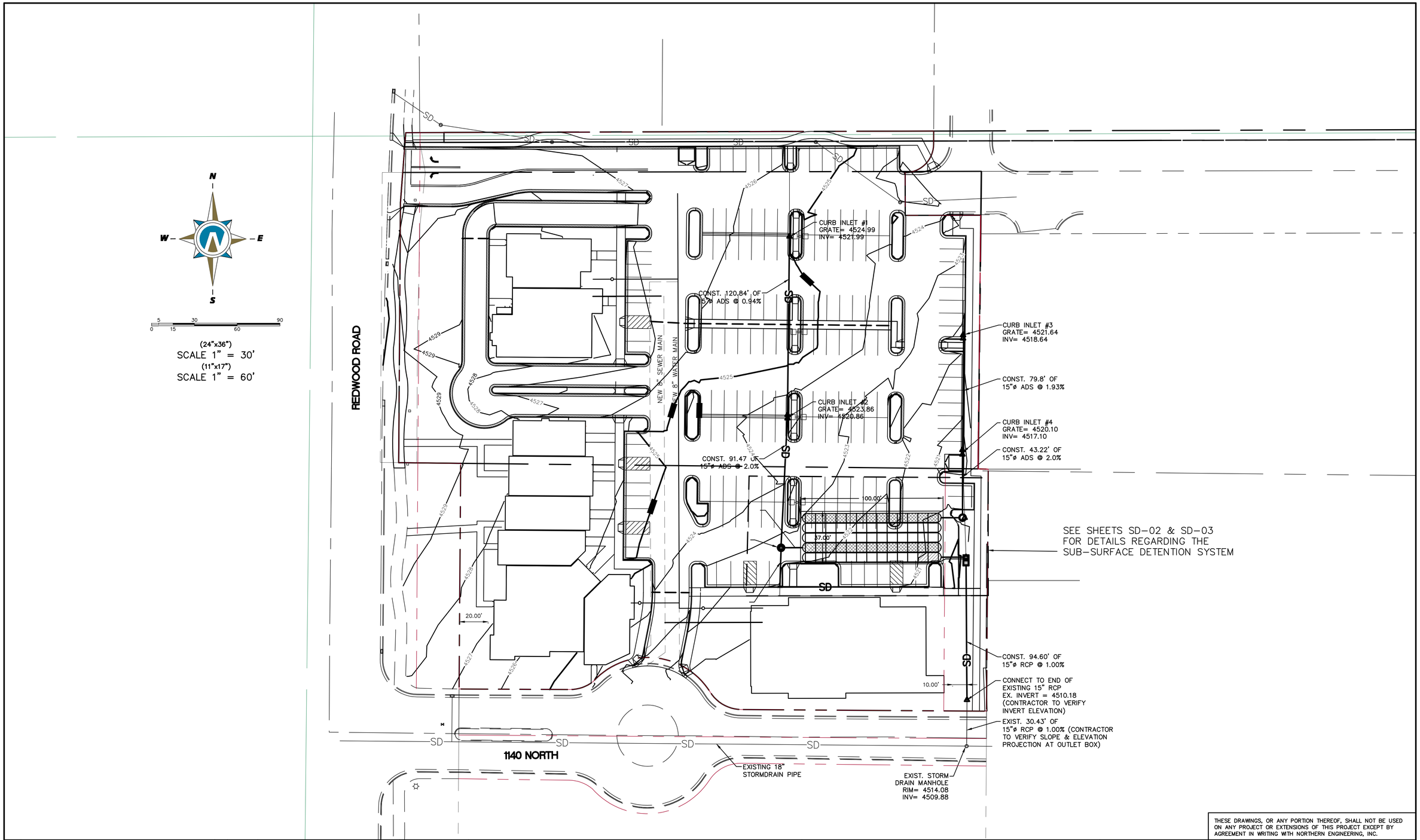
Northern ENGINEERING INC
ENGINEERING–LAND PLANNING
CONSTRUCTION MANAGEMENT

TIMES SQUARE AT SARATOGA
PROJECT LOCATED IN SARATOGA SPRINGS, UTAH
NW 1/4 SECTION 23, T 5S R 1W SLB&M
1140 NORTH AND REDWOOD ROAD

STORM DRAINAGE PLAN

NORTHERN ENGINEERING INC
1040 EAST 800 NORTH
OREM, UTAH 84097
801.802.8992
fax:801.802.8993

DATE: 12/10/15
SCALE: 1" = 20 FT
JOB NO. 3-11-037-00
DESIGNED BY:
DRAWN BY: KEB
SHEET NAME:
SHEET: GR-01



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NO.	REVISIONS	BY	DATE
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DESIGNED BY:	R. HUISH	DATE:	6/22/12
DRAWN BY:	R. HUISH	DATE:	6/22/12
CHECKED BY:		DATE:	
APPROVED:		DATE:	
COGO FILE:		DATE:	
REV. COGO FILE:		DATE:	

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Northern
ENGINEERING INC
ENGINEERING-LAND PLANNING
CONSTRUCTION MANAGEMENT

1040 E. 800 N.
OREM, UTAH 84097
(801) 802-8992

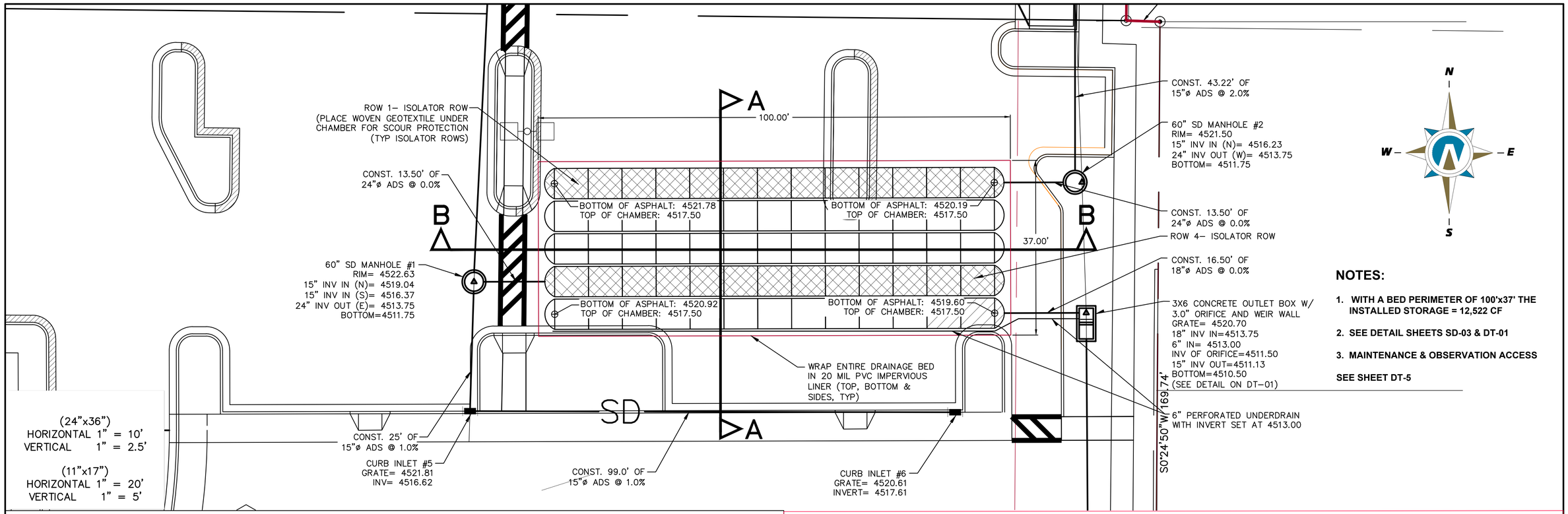
TIMES SQUARE AT SARATOGA SPRINGS

DRAINAGE PLAN

SARATOGA SPRINGS, UTAH

JOB NO. 3-11-037

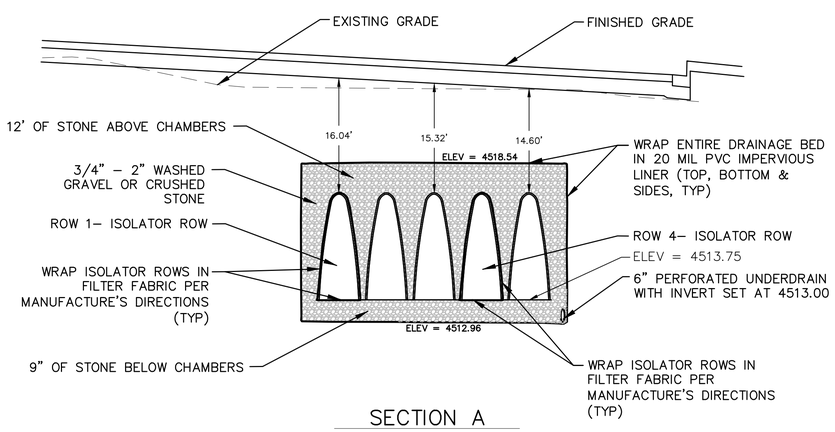
SHEET NO. SD-01



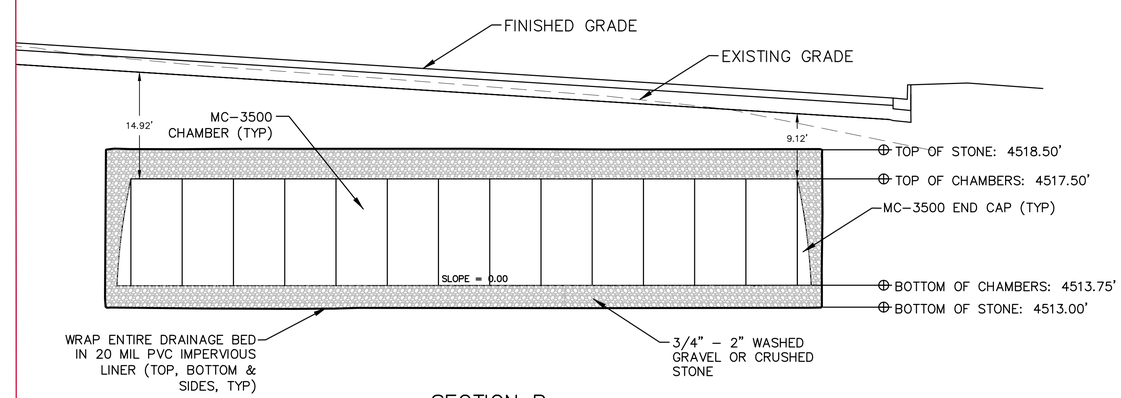
NOTES:

1. WITH A BED PERIMETER OF 100'x37' THE INSTALLED STORAGE = 12,522 CF
2. SEE DETAIL SHEETS SD-03 & DT-01
3. MAINTENANCE & OBSERVATION ACCESS

SEE SHEET DT-5



SECTION A



SECTION B

THESE DRAWINGS, OR ANY PORTION THEREOF, SHALL NOT BE USED ON ANY PROJECT OR EXTENSIONS OF THIS PROJECT EXCEPT BY AGREEMENT IN WRITING WITH NORTHERN ENGINEERING, INC.

NO.	REVISIONS	BY	DATE
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DESIGNED BY:	DATE:
DRAWN BY:	DATE:
CHECKED BY:	DATE:
APPROVED:	DATE:
COGO FILE:	DATE:
REV. COGO FILE:	DATE:

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Northern ENGINEERING INC
ENGINEERING–LAND PLANNING
CONSTRUCTION MANAGEMENT
1040 E. 800 N.
OREM, UTAH 84097
(801) 802–8992

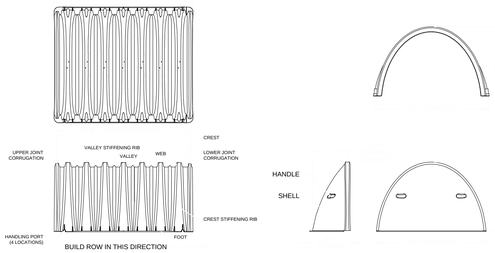
TIMES SQUARE AT SARATOGA SPRINGS

SUB–SURFACE STORMWATER DETENTION

SARATOGA SPRINGS, UTAH

JOB NO. 3–11–037

SHEET NO. SD–02

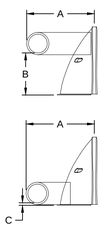


NOMINAL MC-3500 CHAMBER SPECIFICATIONS

SIZE (L x W x H)	90" x 77" x 45" [2286 mm x 1956 mm x 1143 mm]
CHAMBER STORAGE	113.0 ft] [3.11 m]
MINIMUM INSTALLED STORAGE	176.8 ft] [4.96 m]
WEIGHT	124 lbs. [56.2 kg]

NOMINAL MC-3500 END CAP SPECIFICATIONS

SIZE (L x W x H)	26.5" x 71" x 45" [673 mm x 1803 mm x 1143 mm]
ENDCAP STORAGE	15.6 ft] [0.44 m]
MINIMUM INSTALLED STORAGE	45.6 ft] [1.29 m]
WEIGHT	43 lbs. [19.5 kg]



PART NUMBERS ENDING WITH "B" ARE FOR STUBS AT BOTTOM OF END CAP.
PART NUMBERS ENDING WITH "T" ARE FOR STUBS AT TOP OF END CAP.

PART#	STUB	B	C
MC3500TEPE12T	12" [300 mm]	26.36" (670 mm)	N/A
MC3500TEPE12B	12" [300 mm]	N/A	1.35" [34 mm]
MC3500TEPE15T	15" [375 mm]	23.39" [594 mm]	N/A
MC3500TEPE15B	15" [375 mm]	N/A	1.50" [38 mm]
MC3500TEPE18T	18" [450 mm]	20.03" [509 mm]	N/A
MC3500TEPE18B	18" [450 mm]	N/A	1.77" [45 mm]
24" TOP STUB CORED ENDCAP NOT AVAILABLE			
MC3500TEPE24B	24" [600 mm]	N/A	2.06" [52 mm]

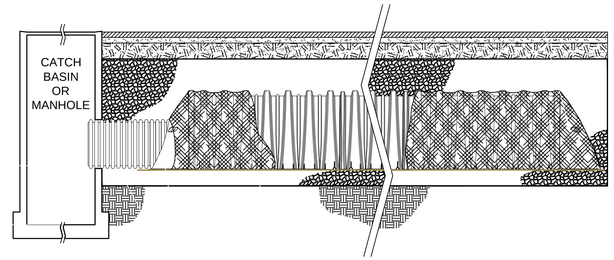
NOTE: ALL DIMENSIONS ARE NOMINAL

STORMTECH INVENTORIED MANIFOLDS AND PRECORED END CAPS INCLUDE 24" [600 MM] BOTTOM (MC3500TEPE24B), 18" [450 MM] BOTTOM (MC3500TEPE18B) AND 15" [375 MM] TOP (MC3500TEPE15T). OTHER PIPE SIZES AND PRECORED END CAPS ARE AVAILABLE UPON SPECIAL ORDER.

MC-3500 STORMWATER CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-3500 OR APPROVED EQUAL.
2. CHAMBERS SHALL BE MADE FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPEDE FLOW.
4. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12 ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
5. ONLY CHAMBERS THAT ARE APPROVED BY THE ENGINEER WILL BE ALLOWED. THE CONTRACTOR SHALL SUBMIT (3 SETS) OF THE FOLLOWING TO THE ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
   - A STRUCTURAL EVALUATION BY A REGISTERED STRUCTURAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12 ARE MET.
   - STRUCTURAL CROSS SECTION DETAIL ON WHICH THE STRUCTURAL CROSS SECTION IS BASED.
6. THE INSTALLATION OF CHAMBERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S LATEST INSTALLATION INSTRUCTIONS.

MC-3500 ENDCAP



24" [600 mm] HDPE ACCESS PIPE REQUIRED.

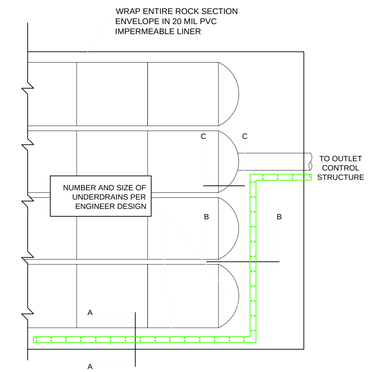
AASHTO M288 CLASS 1 WOVEN GEOTEXTILE BETWEEN FOUNDATION STONE AND CHAMBERS.
MC-3500 - 8.25' [2.51 m] WIDE STRIPS

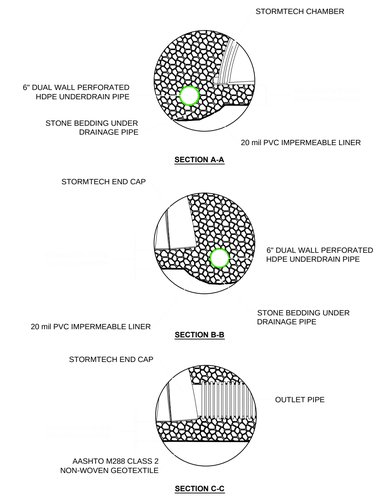
NOTE: FOR MANY APPLICATIONS, THE NON-WOVEN GEOTEXTILE OVER THE MC-3500 CHAMBERS CAN BE ELIMINATED OR SUBSTITUTED WITH THE AASHTO CLASS 1 WOVEN GEOTEXTILE. CONTACT YOUR STORMTECH REPRESENTATIVE FOR ASSISTANCE.

STORMTECH STANDARD DETAIL DISCLAIMER
STORMTECH STANDARD DETAILS DEMONSTRATE RECOMMENDATIONS FOR INSTALLATION AND/OR STANDARD DIMENSIONS OF STORMTECH PRODUCTS. STORMTECH DETAILS DO NOT SUPERSEDE ANY STATE OR LOCAL REGULATORY SPECIFICATIONS. IT IS THE RESPONSIBILITY OF THE CONSULTING ENGINEER TO ENSURE COMPLIANCE WITH ALL REGULATORY SPECIFICATIONS. STORMTECH HAS NOT AUTHORIZED, AND IS NOT RESPONSIBLE FOR ANY ALTERATIONS BY OTHERS TO STORMTECH STANDARD DETAILS.

20 BEAVER ROAD, SUITE 104
WETHERSFIELD, CT 06109
PHONE: 888-892-2694
FAX: 866-328-8401
WWW.STORMTECH.COM

MC-3500 ISOLATOR® ROW PROFILE
SCALE: NTS
DATE: 7-17-09
DRAWN BY: JLM
CHECKED:





STORMTECH STANDARD DETAIL DISCLAIMER
STORMTECH STANDARD DETAILS DEMONSTRATE RECOMMENDATIONS FOR INSTALLATION AND/OR STANDARD DIMENSIONS OF STORMTECH PRODUCTS. STORMTECH DETAILS DO NOT SUPERSEDE ANY STATE OR LOCAL REGULATORY SPECIFICATIONS. IT IS THE RESPONSIBILITY OF THE CONSULTING ENGINEER TO ENSURE COMPLIANCE WITH ALL REGULATORY SPECIFICATIONS. STORMTECH HAS NOT AUTHORIZED, AND IS NOT RESPONSIBLE FOR ANY ALTERATIONS BY OTHERS TO STORMTECH STANDARD DETAILS.

20 BEAVER ROAD, SUITE 104
WETHERSFIELD, CT 06109
PHONE: 888-892-2694
FAX: 866-328-8401
WWW.STORMTECH.COM

MC-3500 OUTLET/ UNDERDRAIN DETAIL
SCALE: NTS
DATE: 7-15-09
DRAWN BY: JLM
CHECKED:

STORMTECH GENERAL NOTES

1. STORMTECH LLC ("STORMTECH") REQUIRES INSTALLING CONTRACTORS TO USE AND UNDERSTAND STORMTECH'S LATEST MC-3500 INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING SYSTEM INSTALLATION.
2. STORMTECH OFFERS INSTALLATION CONSULTATIONS TO INSTALLING CONTRACTORS. CONTACT OUR TECHNICAL SERVICE DEPARTMENT OR LOCAL STORMTECH REPRESENTATIVE AT LEAST 30 DAYS PRIOR TO SYSTEM INSTALLATION TO ARRANGE A PRE-INSTALLATION CONSULTATION. OUR REPRESENTATIVES CAN THEN ANSWER QUESTIONS OR ADDRESS COMMENTS ON THE STORMTECH CHAMBER SYSTEM AND INFORM THE INSTALLING CONTRACTOR OF THE MINIMUM INSTALLATION REQUIREMENTS BEFORE BEGINNING THE SYSTEM'S CONSTRUCTION. CALL **860-529-8188** TO SPEAK TO A TECHNICAL SERVICE REPRESENTATIVE OR VISIT **WWW.STORMTECH.COM** TO RECEIVE A COPY OF OUR INSTALLATION INSTRUCTIONS.
3. STORMTECH REQUIREMENTS FOR SYSTEMS WITH PAVEMENT DESIGN (ASPHALT, CONCRETE PAVERS, ETC.): MINIMUM COVER IS 24" [610 mm] NOT INCLUDING PAVEMENT; MAXIMUM COVER IS 6.5' [1.98 m] INCLUDING PAVEMENT. FOR INSTALLATIONS THAT DO NOT INCLUDE PAVEMENT, WHERE RUTTING FROM VEHICLES MAY OCCUR, MINIMUM REQUIRED COVER IS 30" [762 mm], MAXIMUM COVER IS 6.5' [1.98 m].
4. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH THE BEARING CAPACITY OF THE CHAMBER FOUNDATION MATERIALS TO THE DESIGN ENGINEER.
5. AASHTO M288 CLASS 2 NON-WOVEN GEOTEXTILE (FILTER FABRIC) MUST BE USED AS INDICATED IN THE PROJECT PLANS.
6. STONE PLACEMENT BETWEEN CHAMBERS ROWS AND AROUND PERIMETER MUST FOLLOW INSTRUCTIONS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH MC-3500 INSTALLATION INSTRUCTIONS.
7. BACKFILLING OVER THE CHAMBERS MUST FOLLOW REQUIREMENTS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH MC-3500 INSTALLATION INSTRUCTIONS.
8. THE CONTRACTOR MUST REFER TO STORMTECH MC-3500 INSTALLATION INSTRUCTIONS FOR A TABLE OF ACCEPTABLE VEHICLE LOADS AT VARIOUS DEPTHS OF COVER. THIS INFORMATION IS ALSO AVAILABLE ON THE STORMTECH WEBSITE: **WWW.STORMTECH.COM**. THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING VEHICLES THAT EXCEED STORMTECH REQUIREMENTS FROM TRAVELING ACROSS OR PARKING OVER THE STORMWATER SYSTEM. TEMPORARY FENCING, WARNING TAPE AND APPROPRIATELY LOCATED SIGNS ARE COMMONLY USED TO PREVENT UNAUTHORIZED VEHICLES FROM ENTERING SENSITIVE CONSTRUCTION AREAS.
9. THE CONTRACTOR MUST APPLY EROSION AND SEDIMENT CONTROL MEASURES TO PROTECT THE STORMWATER SYSTEM DURING ALL PHASES OF SITE CONSTRUCTION PER LOCAL CODES AND DESIGN ENGINEER'S SPECIFICATIONS.
10. **STORMTECH PRODUCT WARRANTY IS LIMITED.** CONTACT STORMTECH FOR WARRANTY INFORMATION.

STORMTECH STANDARD DETAIL DISCLAIMER
STORMTECH STANDARD DETAILS DEMONSTRATE RECOMMENDATIONS FOR INSTALLATION AND/OR STANDARD DIMENSIONS OF STORMTECH PRODUCTS. STORMTECH DETAILS DO NOT SUPERSEDE ANY STATE OR LOCAL REGULATORY SPECIFICATIONS. IT IS THE RESPONSIBILITY OF THE CONSULTING ENGINEER TO ENSURE COMPLIANCE WITH ALL REGULATORY SPECIFICATIONS. STORMTECH HAS NOT AUTHORIZED, AND IS NOT RESPONSIBLE FOR ANY ALTERATIONS BY OTHERS TO STORMTECH STANDARD DETAILS.

20 BEAVER ROAD, SUITE 104
WETHERSFIELD, CT 06109
PHONE: 888-892-2694
FAX: 866-328-8401
WWW.STORMTECH.COM

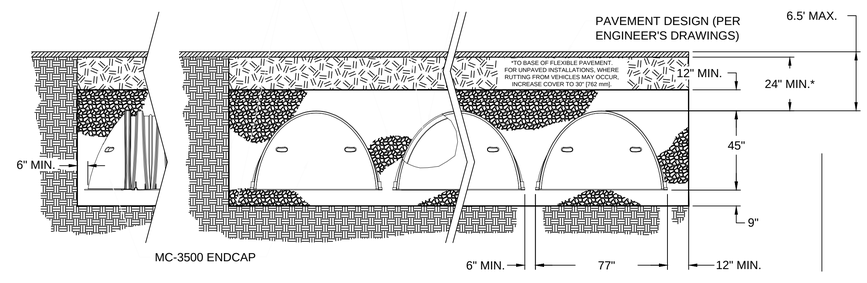
STORMTECH GENERAL NOTES
SCALE: NTS
DATE: 7-15-09
DRAWN BY: JLM
CHECKED:

MC-3500 CHAMBER

NOMINAL 3/4 - 2 INCH CLEAN, CRUSHED, ANGULAR STONE

WRAP ENTIRE ROCK SECTION IN 20 MIL PVC IMPERMEABLE LINER

THE INSTALLED CHAMBER SYSTEM SHALL PROVIDE THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12 FOR EARTH AND LIVE LOADS, WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.



STORMTECH STANDARD DETAIL DISCLAIMER
STORMTECH STANDARD DETAILS DEMONSTRATE RECOMMENDATIONS FOR INSTALLATION AND/OR STANDARD DIMENSIONS OF STORMTECH PRODUCTS. STORMTECH DETAILS DO NOT SUPERSEDE ANY STATE OR LOCAL REGULATORY SPECIFICATIONS. IT IS THE RESPONSIBILITY OF THE CONSULTING ENGINEER TO ENSURE COMPLIANCE WITH ALL REGULATORY SPECIFICATIONS. STORMTECH HAS NOT AUTHORIZED, AND IS NOT RESPONSIBLE FOR ANY ALTERATIONS BY OTHERS TO STORMTECH STANDARD DETAILS.

20 BEAVER ROAD, SUITE 104
WETHERSFIELD, CT 06109
PHONE: 888-892-2694
FAX: 866-328-8401
WWW.STORMTECH.COM

MC-3500 TYPICAL CROSS-SECTION
SCALE: NTS
DATE: 7-17-09
DRAWN BY: JLM
CHECKED:

NO.	REVISIONS	BY	DATE
5			
4			
3			
2			
1			

DESIGNED BY: R. HUISH	DATE:	6/22/12	
DRAWN BY: R. HUISH	DATE:	6/22/12	
CHECKED BY:	DATE:		
APPROVED:	DATE:		
COGO FILE:	DATE:		
REV. COGO FILE:	DATE:		

K:\3-11-037-00 Saratoga Medical\CAD\Final\Final\STORM DRAIN DETAILS.dwg 6/29/2015 6:58 AM

Northern ENGINEERING INC
ENGINEERING-LAND PLANNING
CONSTRUCTION MANAGEMENT
1040 E. 800 N.
OREM, UTAH 84097
(801) 802-8992

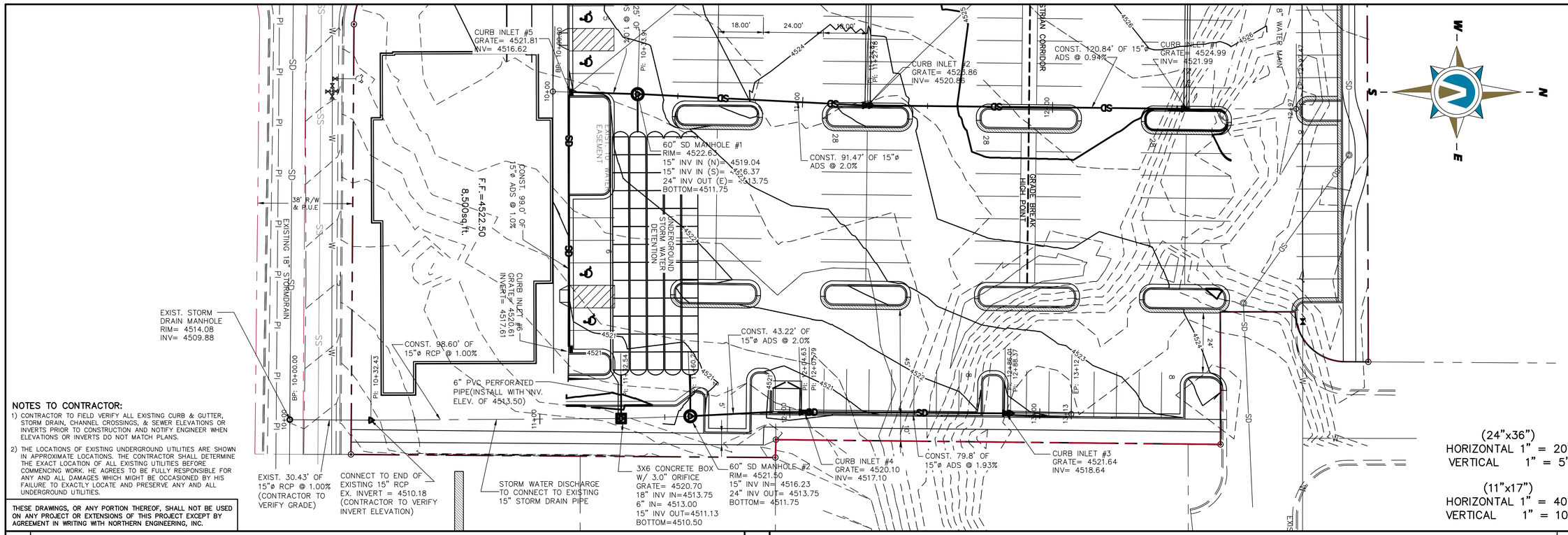
TIMES SQUARE AT SARATOGA SPRINGS

TYPICAL STORMTECH DETAILS

SARATOGA SPRINGS, UTAH

JOB NO. 3-11-037

SHEET NO. SD-03



NOTES TO CONTRACTOR:

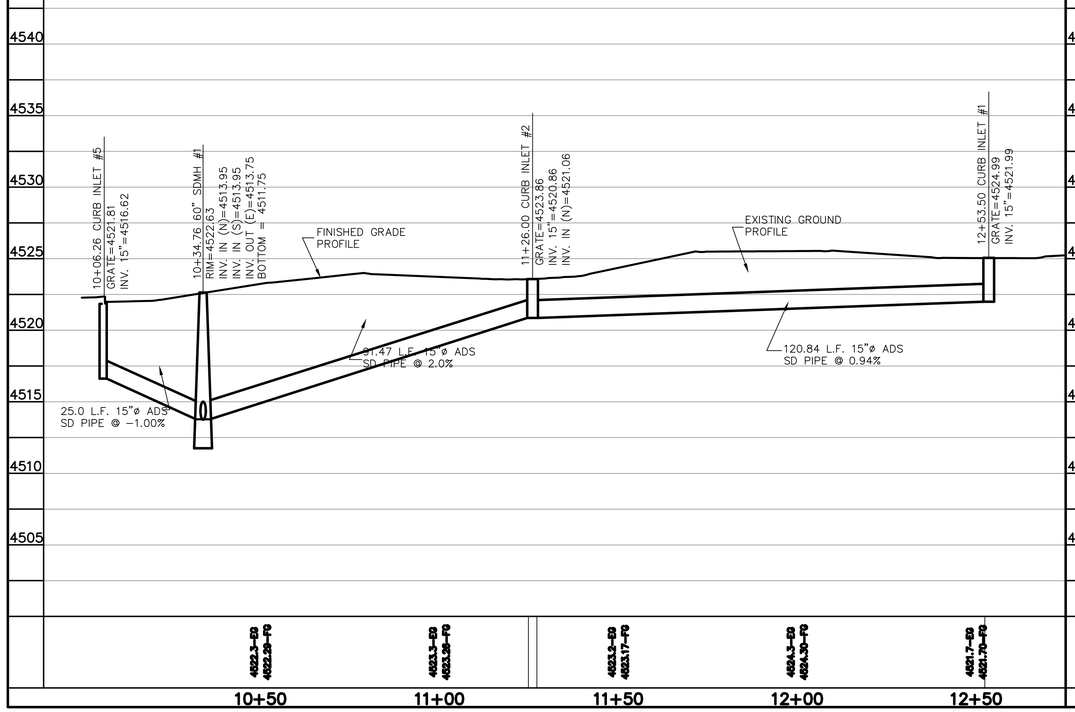
1) CONTRACTOR TO FIELD VERIFY ALL EXISTING CURB & GUTTER, STORM DRAIN, CHANNEL CROSSINGS, & SEWER ELEVATIONS OR INVERTS PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER WHEN ELEVATIONS OR INVERTS DO NOT MATCH PLANS.

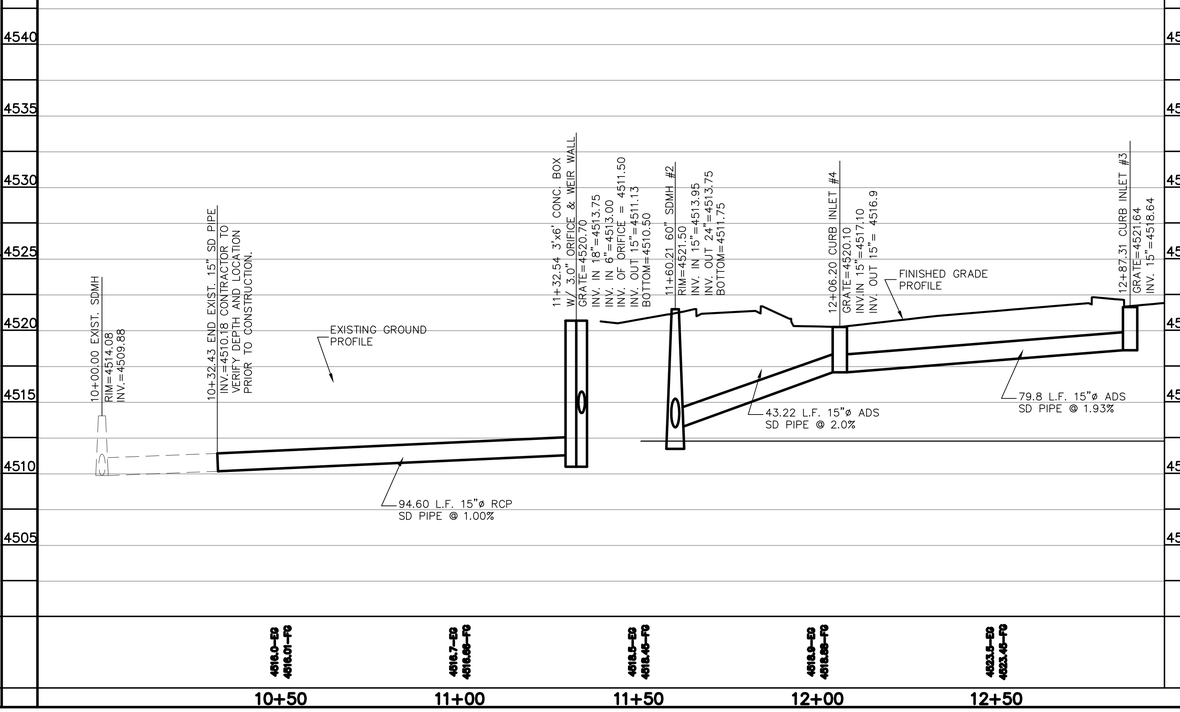
2) THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE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

THESE DRAWINGS, OR ANY PORTION THEREOF, SHALL NOT BE USED ON ANY PROJECT OR EXTENSIONS OF THIS PROJECT EXCEPT BY AGREEMENT IN WRITING WITH NORTHERN ENGINEERING, INC.

(24"x36")
HORIZONTAL 1" = 20'
VERTICAL 1" = 5'

(11"x17")
HORIZONTAL 1" = 40'
VERTICAL 1" = 10'





NO.	REVISIONS	DATE	BY	APP.

Northern ENGINEERING INC
ENGINEERING–LAND PLANNING
CONSTRUCTION MANAGEMENT

K:\3-11-037-00 Saratoga Medical\CAD\Final\Final\STORM DRAIN P & P.dwg 6/29/2015 9:39 AM

TIMES SQUARE AT SARATOGA
PROJECT LOCATED IN SARATOGA SPRINGS, UTAH
NW 1/4 SECTION 23, T 5S R 1W SLB&M
1140 NORTH REDWOOD ROAD

NEW STORM DRAIN
PLAN & PROFILE

NORTHERN ENGINEERING INC
1040 EAST 800 NORTH
OREM, UTAH 84097
801.802.8992
fax:801.802.8993

DATE: 6/29/15
SCALE: 1" = 20 FT
JOB NO.: 3-11-037-00
DESIGNED BY:
DRAWN BY:
SHEET NAME:
SHEET: SD-04

CONSTRUCTION NOTES

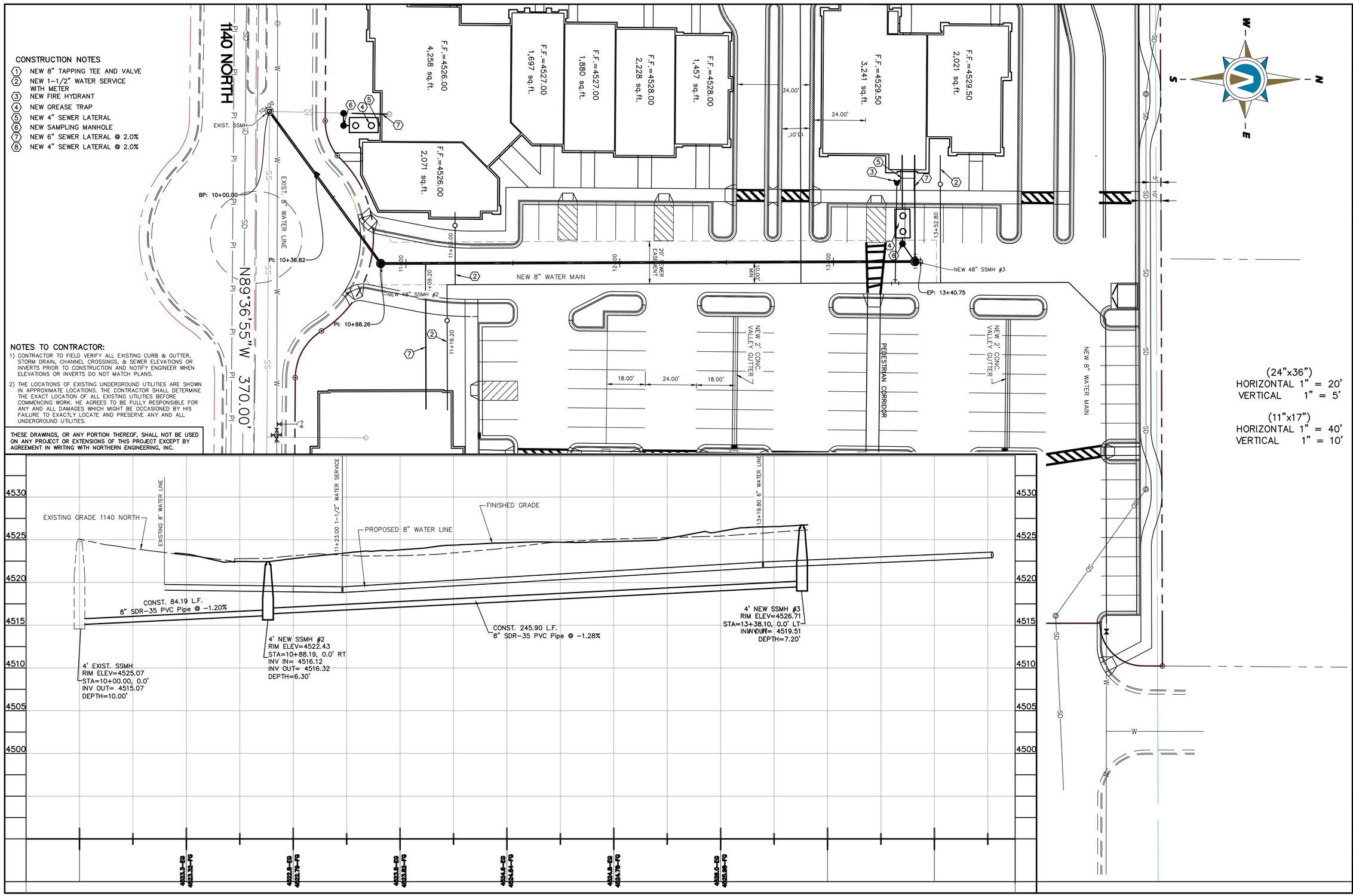
1. NEW 8" TAPPING TEE AND VALVE
2. NEW 1-1/2" WATER SERVICE WITH METER
3. NEW FIRE HYDRANT
4. NEW GREASE TRAP
5. NEW 4" SEWER LATERAL
6. NEW SAMPLING MANHOLE
7. NEW 6" SEWER LATERAL @ 2.0%
8. NEW 4" SEWER LATERAL @ 2.0%

NOTES TO CONTRACTOR:

1) CONTRACTOR TO FIELD VERIFY ALL EXISTING CURB & GUTTER, STORM DRAIN, CHANNEL CROSSINGS, & SEWER ELEVATIONS OR INVERTS PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER WHEN ELEVATIONS OR INVERTS DO NOT MATCH PLANS.

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

THESE DRAWINGS, OR ANY PORTION THEREOF, SHALL NOT BE USED ON ANY PROJECT OR EXTENSIONS OF THIS PROJECT EXCEPT BY AGREEMENT IN WRITING WITH NORTHERN ENGINEERING, INC.



(24"x36")
HORIZONTAL 1" = 20'
VERTICAL 1" = 5'

(11"x17")
HORIZONTAL 1" = 40'
VERTICAL 1" = 10'

NO.	REVISIONS	DATE	BY	APP.

Northern ENGINEERING INC
ENGINEERING-LAND PLANNING
CONSTRUCTION MANAGEMENT

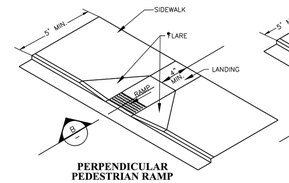
K:\3-11-037-00 Saratoga Medical\CAD\Final\SEWER PLAN & PROFILE.dwg 11/23/2015 11:08 AM

TIMES SQUARE AT SARATOGA
PROJECT LOCATED IN SARATOGA SPRINGS, UTAH
NW 1/4 SECTION 23, T 5S R 1W SLB&M
1140 NORTH REDWOOD ROAD

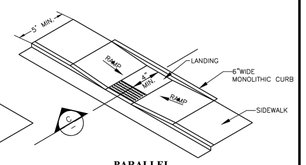
NEW SEWER PLAN & PROFILE

NORTHERN ENGINEERING INC
1040 EAST 800 NORTH
OREM, UTAH 84097
801.802.8992
fax:801.802.8993

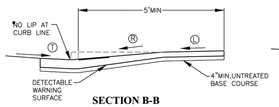
DATE: 11/23/15
SCALE: 1" = 20 FT
JOB NO. 3-11-037-00
DESIGNED BY:
DRAWN BY:
SHEET NAME:
SHEET: SP&P-01



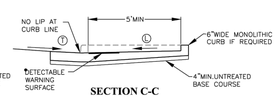
PERPENDICULAR PEDESTRIAN RAMP



PARALLEL PEDESTRIAN RAMP



SECTION B-B



SECTION C-C

SLOPE TABLE			
	ITEM	MAX. RUNNING SLOPE	MAX. CROSS SLOPE
Ⓛ	LANDING	2% (1V:48H) (b)	2% (1V:48H) (b)
Ⓡ	RAMP	8.33% (1V:12H) (c)	2% (1V:48H) (d)
Ⓣ	TRANSITION	5% (1V:20H) (a)	2% (1V:48H) (d)
	SIDEWALK	--	2% (1V:48H)
	FLARE	10% (1V:10H)	--

* RUNNING SLOPE IS IN THE DIRECTION OF PEDESTRIAN TRAVEL, WHILE CROSS SLOPE IS PERPENDICULAR TO PEDESTRIAN TRAVEL.

(a) TRANSITION RUNNING SLOPE NEEDS TO BE CONSTANT ACROSS ENTIRE CURB CUT. WARP GUTTER PAN TO MEET REQUIRED TRANSITION SLOPE AT CURB CUT.

EXCEPTION:

(b) SLOPE REQUIREMENTS DO NOT APPLY AT MID-BLOCK CROSSINGS.

(c) PARALLEL RAMPS ARE NOT REQUIRED TO EXCEED 15-FEET IN LENGTH.

(d) CROSS SLOPE REQUIREMENT DOES NOT APPLY AT PERPENDICULAR RAMP MID-BLOCK CROSSING.

NOTES:

1. CONFIGURATION OF RAMPS AND LANDINGS MAY BE CHANGED BUT MUST MEET PEDESTRIAN RAMP DIMENSION AND SLOPE REQUIREMENTS. SPECIFIC SITE CONDITIONS WILL VARY. THE USE OF FLARES, CURBWALLS, ETC. ARE AT THE DISCRETION OF THE ENGINEER.
2. PERPENDICULAR AND PARALLEL PEDESTRIAN RAMPS SHOWN ON THIS DRAWING ARE ACCEPTABLE FOR USE AT MID BLOCK OR CORNER INSTALLATIONS. REFER TO STD DWG ST 5C, 5D AND ST 5C FOR EXAMPLES OF CORNER INSTALLATIONS.
3. PROVIDE DETECTABLE WARNING SURFACE FOR FULL WIDTH OF RAMP, LANDING, OR CURB CUT. SEE DETAIL A, DWG 5A, FOR DETECTABLE WARNING SURFACE DIMENSIONS.
4. LOCATE DETECTABLE WARNING SURFACE SO THAT THE EDGE NEAREST THE STREET IS 6" TO 8" FROM THE CURB LINE.
5. PROVIDE DETECTABLE WARNING SURFACE THAT CONTRASTS WITH ADJACENT WALKING SURFACE, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT. ACCEPTABLE COLORS INCLUDE: YELLOW.
6. USE CLASS AA(AE) CONCRETE.
7. USE UNTREATED BASE COURSE UNDER ALL CONCRETE FLATWORK.

HANDICAP ACCESSIBLE RAMP

DATE:	FEBRUARY 2013
DRAWING NAME:	ST-5B
DRAWN BY:	CJG
APPROVED:	APPROVED:

REVISIONS

REV	DATE	BY	COMMENTS

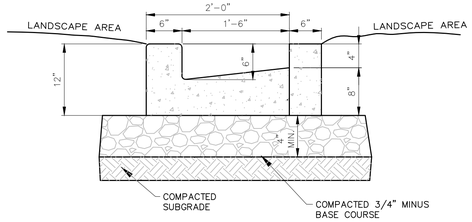
SARATOGA SPRINGS CITY

1307 N. COMMERCE DR. SARATOGA SPRINGS, UT 84045 PHONE: 801-766-9793 FAX: 801-766-9794

STANDARD DETAILS

STREET STANDARDS

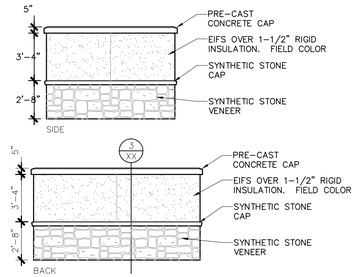
ST-5B

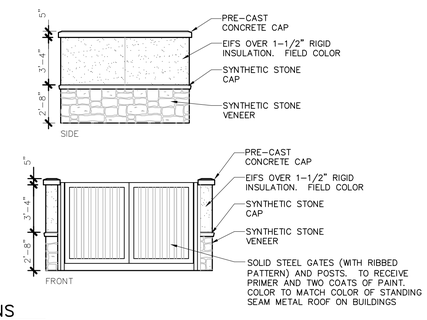


PASS THROUGH GUTTER

(CURB IN PARKING LOT)

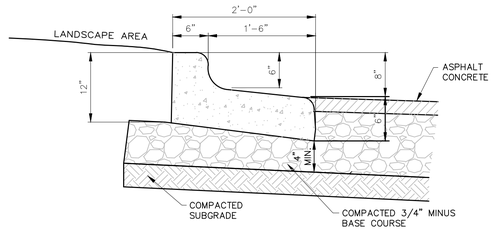
–NTS–





DUMPSTER ELEVATIONS

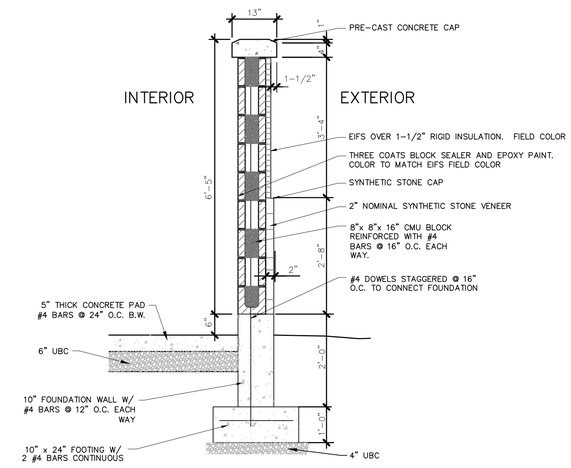
–NTS–



REVERSE LIP CURB & GUTTER

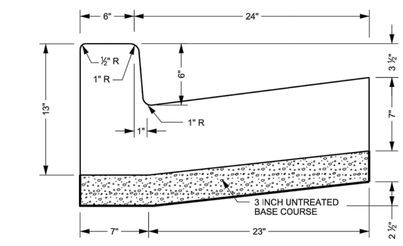
(CURB IN PARKING LOT)

–NTS–



DUMPSTER ENCLOSURE WALL SECTION

–NTS–



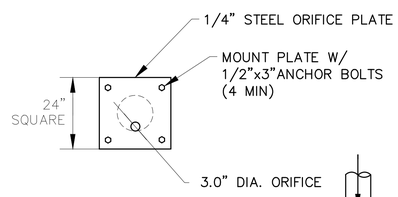
TYPE B1 CURB & GUTTER

AREA = 1.680 SQ FT

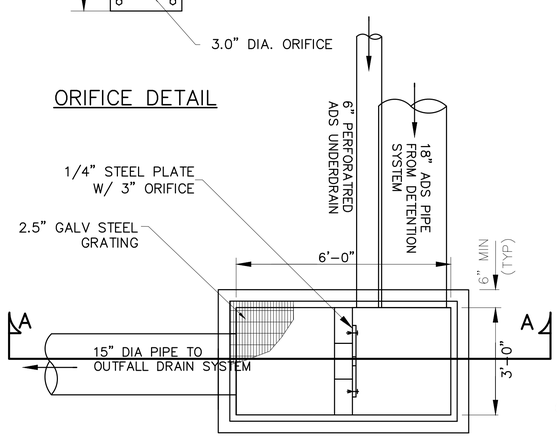
UDOT CURB AND GUTTER

REDWOOD ROAD

–NTS–

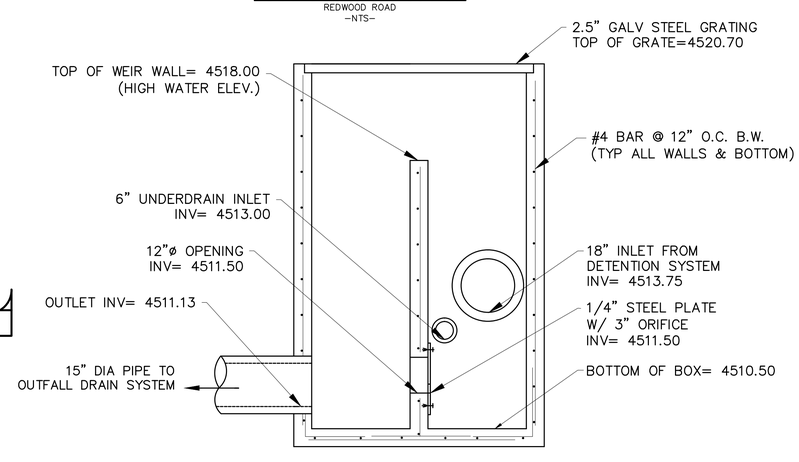


ORIFICE DETAIL



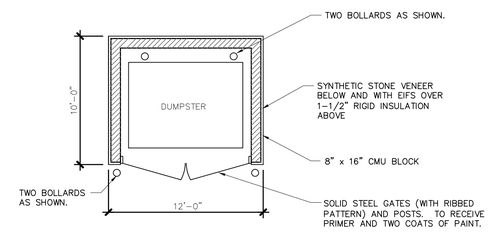
PLAN

NOTE: GROUT ALL PIPE PENETRATIONS

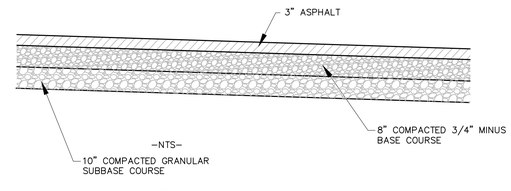


SECTION A

OUTLET – ORIFICE AND OVERFLOW BOX



PLAN – DUMPSTER



–NTS–

ASPHALT SECTION IN PARKING LOT

NO.	REVISIONS	DATE	BY	APP.

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Northern ENGINEERING INC

ENGINEERING–LAND PLANNING
CONSTRUCTION MANAGEMENT

TIMES SQUARE AT SARATOGA

PROJECT LOCATED IN SARATOGA SPRINGS, UTAH
NW 1/4 SECTION 23, T 5S R 1W SLB&M
AT 1140 NORTH REDWOOD ROAD

DETAILS

NORTHERN ENGINEERING INC
1040 EAST 800 NORTH
OREM, UTAH 84097
801.802.8992
fax:801.802.8993

DATE: 12/10/15

SCALE: 1" = 30 FT

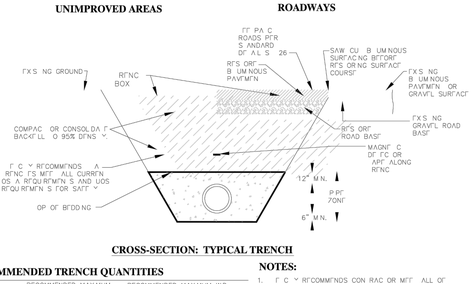
JOB NO.: 3-11-037

DESIGNED BY:

DRAWN BY: JM

SHEET NAME: DETAIL_01

SHEET: DT-01



CROSS-SECTION: TYPICAL TRENCH

NOTES:

1. THE CITY RECOMMENDS CONTRACTOR MEET ALL OF THE REQUIREMENTS ESTABLISHED FOR SAFE TRENCHING. (SEE OSHA AND UOSH REQUIREMENTS, LATEST EDITIONS).

2. CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES BEFORE LAYING PIPE WITHIN 50' OF SAID UTILITIES WHICH MAY BE EXPOSED, DAMAGED OR CROSSED AS SHOWN ON THE DRAWINGS OR AS "BLUE STAKED". THE CONTRACTOR WILL MAKE ARRANGEMENTS WITH THE UTILITY COMPANY TO MOVE THE UTILITY IF NECESSARY OR OBTAIN PERMISSION FROM THE CITY ENGINEER TO MODIFY GRADE OF PIPELINE IN ORDER TO GO AROUND UTILITIES.

3. TESTING: ALL STORM DRAIN LINES TO BE "VIDEOED" AND NECESSARY REPAIRS MADE BEFORE ACCEPTANCE. A MANDREL OR BALL CAN BE USED TO VERIFY DEFORMATION OF A PIPE AS DETERMINED FROM THE VIDEO UNLESS SPECIFIED OTHERWISE.

4. ALL STORM DRAIN TO BE INSTALLED IN PUBLIC RIGHT-OF-WAY OR RECORDED DRAINAGE EASEMENT UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

5. WHERE COLLAPSIBLE SOILS ARE ENCOUNTERED, FURNISH, PLACE AND COMPACT IMPORTED BACKFILL MATERIALS AS REQUIRED AND AS DIRECTED.

6. MIN. DEPTH OF COVER SHALL MEET MANUFACTURERS RECOMMENDATIONS.

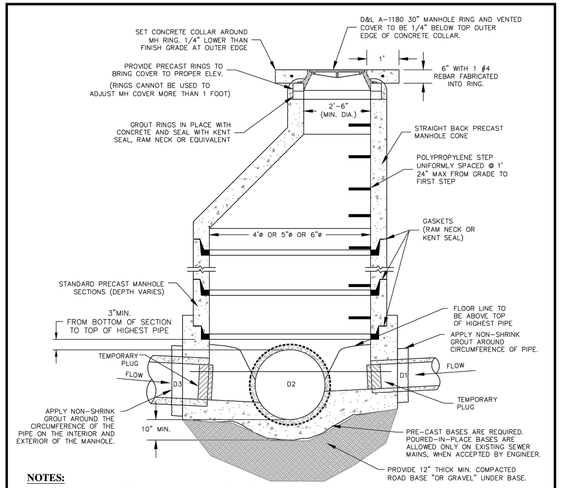
7. IN ROCKY SUB-GRADES 18" OF CLEARANCE SHALL BE PROVIDED ON ALL SIDES OF PIPE.

8. INSTALL MAGNETIC DETECTOR TAPE 3' ABOVE PIPE IN TRENCH.

STORM DRAIN TRENCH

DATE: APRIL 2014	REVISIONS			
DRAWING NAME: SD-1	REV	DATE	BY	COMMENTS
DRAWN BY: ETL				
CHECKED: APPROVED:	SARATOGA SPRINGS CITY — 1307 N. COMMERCE DR., 85045, SARATOGA SPRINGS, UT 84045; PHONE: 801-766-9793; FAX: 801-766-9774			

STANDARD DETAILS — STORM DRAIN — **SD-1**



NOTES:

1. IF GRADE ALLOWS, INVERTS OF D1 & D3 SHALL BE REQUIRED TO MATCH TOP OF D2.

2. AFTER ALL GRADING AROUND MANHOLE HAS BEEN COMPLETED AND FINAL SURFACING IS IN PLACE REMOVE TEMPORARY PLUGS, DEBRIS AND PLYWOOD FROM INSIDE OF MANHOLES.

3. IF MANHOLE IS TO BE POURED IN PLACE, FOLLOW SAME PATTERN AS SHOWN EXCEPT USE 10" MIN WALL THICKNESS.

4. MANHOLES DEEPER THAN 20 FEET SHALL HAVE AN 18" THICK CONCRETE BASE.

5. CONE AND WALL SECTIONS SHALL CONFORM WITH ASTM C-478 STANDARD

6. ALL MANHOLES TO BE HS-20 RATED

7. MANHOLES WITH SOLID LIDS MUST BE EPOXY LINED.

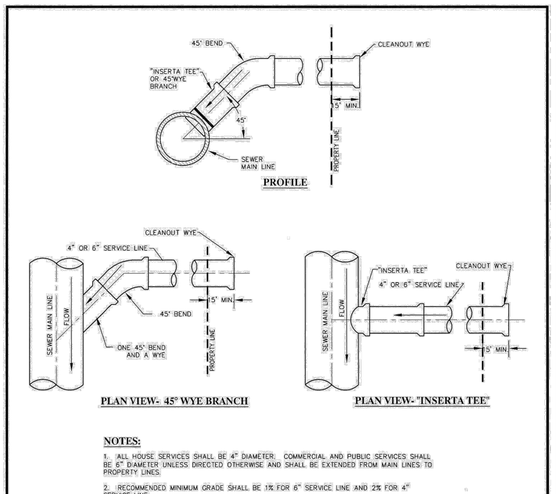
8. MANHOLES OUTSIDE OF ROW SHALL HAVE SOLID LOCKING LIDS.

9. FLAT CAST RINGS ARE NOT PERMITTED

SANITARY SEWER MANHOLE

DATE: FEBRUARY 2013	REVISIONS			
DRAWING NAME: SS-2	REV	DATE	BY	COMMENTS
DRAWN BY: CJG				
CHECKED: APPROVED:	SARATOGA SPRINGS CITY — 1307 N. COMMERCE DR., 85045, SARATOGA SPRINGS, UT 84045; PHONE: 801-766-9793; FAX: 801-766-9774			

STANDARD DETAILS — SANITARY SEWER — **SS-2**



NOTES:

1. ALL HOUSE SERVICES SHALL BE 4" DIAMETER; COMMERCIAL AND PUBLIC SERVICES SHALL BE 6" DIAMETER UNLESS DIRECTED OTHERWISE AND SHALL BE EXTENDED FROM MAIN LINES TO PROPERTY LINES.

2. RECOMMENDED MINIMUM GRADE SHALL BE 1% FOR 6" SERVICE LINE AND 2% FOR 4" SERVICE LINE.

3. ALL 90° BENDS AT CONNECTION TO MAIN MUST BE CONSTRUCTED WITH ONE 45° BEND AND A WYE.

4. DIRECT NOSE ON IS ALLOWED WHEN CONNECTING TO EXISTING MAIN LINE. USE RUBBER BOOT AS PER CITY WITH STAINLESS STEEL STRAPS, IF REQUIRED. CORE CUT EXISTING PIPE, DO NOT BREAK OUT WITH A HAMMER.

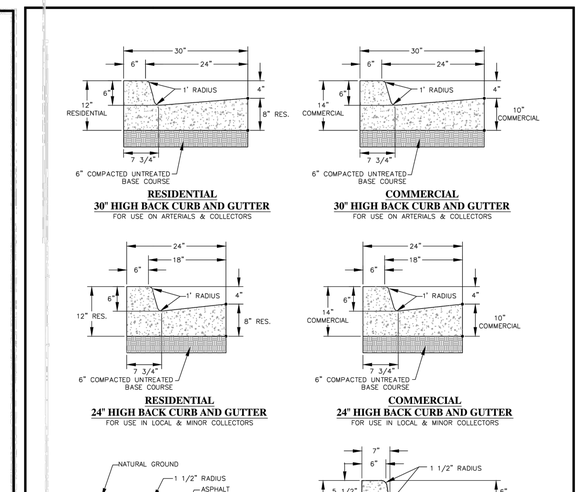
5. NOTIFY CITY 24 HOURS IN ADVANCE OF ANY CONNECTION. EVERY CONNECTION TO BE INSPECTED BY CITY.

6. CONNECTION TO USERS TO BE DONE BY OTHERS.

SEWER SERVICE CONNECTION

DATE: MARCH 2004	REVISIONS			
DRAWING NAME: SS-3	REV	DATE	BY	COMMENTS
DRAWN BY: JMC/DKB				
CHECKED: APPROVED:	CONSULTING ENGINEERS AND SURVEYORS — 12401 South 450 East; (801) 571-9414 • Fax: (801) 571-9448			

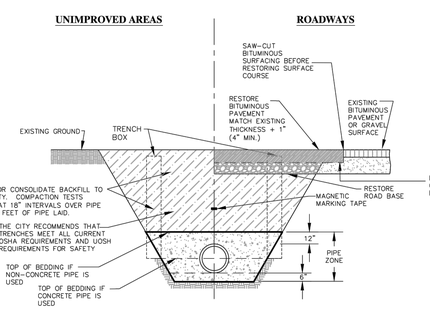
REV. B — STANDARD DETAILS — SARATOGA CITY — **SS-3**



CURB & GUTTER DETAILS

DATE: FEBRUARY 2013	REVISIONS			
DRAWING NAME: ST-2	REV	DATE	BY	COMMENTS
DRAWN BY: CJG				
CHECKED: APPROVED:	SARATOGA SPRINGS CITY — 1307 N. COMMERCE DR., 85045, SARATOGA SPRINGS, UT 84045; PHONE: 801-766-9793; FAX: 801-766-9774			

STANDARD DETAILS — STREET STANDARDS — **ST-2**



CROSS-SECTION: TYPICAL TRENCH

NOTES:

1. THE CITY RECOMMENDS CONTRACTOR MEET ALL OF THE REQUIREMENTS ESTABLISHED FOR SAFE TRENCHING. (SEE OSHA AND UOSH REQUIREMENTS, LATEST EDITIONS).

2. CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES BEFORE LAYING PIPE WITHIN 50' OF SAID UTILITIES WHICH MAY BE EXPOSED, DAMAGED OR CROSSED AS SHOWN ON THE DRAWINGS OR AS "BLUE STAKED". THE CONTRACTOR WILL MAKE ARRANGEMENTS WITH THE UTILITY COMPANY TO MOVE THE UTILITY IF NECESSARY OR OBTAIN PERMISSION FROM THE CITY ENGINEER TO MODIFY GRADE OF PIPELINE IN ORDER TO GO AROUND UTILITIES.

3. TESTING: ALL STORM DRAIN LINES TO BE "VIDEOED" AND NECESSARY REPAIRS MADE BEFORE ACCEPTANCE. A MANDREL OR BALL CAN BE USED TO VERIFY DEFORMATION OF A PIPE AS DETERMINED FROM THE VIDEO UNLESS SPECIFIED OTHERWISE.

4. ALL STORM DRAIN TO BE INSTALLED IN PUBLIC RIGHT-OF-WAY OR RECORDED DRAINAGE EASEMENT UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

5. WHERE COLLAPSIBLE SOILS ARE ENCOUNTERED, FURNISH, PLACE AND COMPACT IMPORTED BACKFILL MATERIALS AS REQUIRED AND AS DIRECTED.

6. MIN. DEPTH OF COVER SHALL MEET MANUFACTURERS RECOMMENDATIONS.

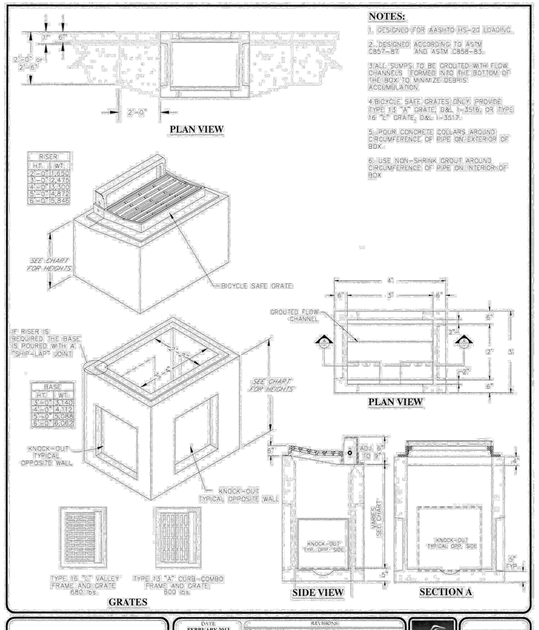
7. IN ROCKY SUB-GRADES 18" OF CLEARANCE SHALL BE PROVIDED ON ALL SIDES OF PIPE.

8. INSTALL MAGNETIC DETECTOR TAPE 3' ABOVE PIPE IN TRENCH.

STORM DRAIN TRENCH

DATE: APRIL 2014	REVISIONS			
DRAWING NAME: SD-1	REV	DATE	BY	COMMENTS
DRAWN BY: ETL				
CHECKED: APPROVED:	SARATOGA SPRINGS CITY — 1307 N. COMMERCE DR., 85045, SARATOGA SPRINGS, UT 84045; PHONE: 801-766-9793; FAX: 801-766-9774			

STANDARD DETAILS — STORM DRAIN — **SD-1**



NOTES:

1. DESIGNED FOR AASHTO HS-20 LOADING.

2. DESIGNED ACCORDING TO ASTM C857-97 AND ASTM C858-93.

3. ALL SUMPS TO BE GROUTED WITH FLOW CHANNELS FORMED INTO THE BOTTOM OF THE BOX TO MINIMIZE DEBRIS ACCUMULATION.

4. BICYCLE SAFE GRATES ONLY. PROVIDE TYPE 13 "A" GRATE, D&L I-3516, OR TYPE 16 "L" GRATE, D&L I-3517.

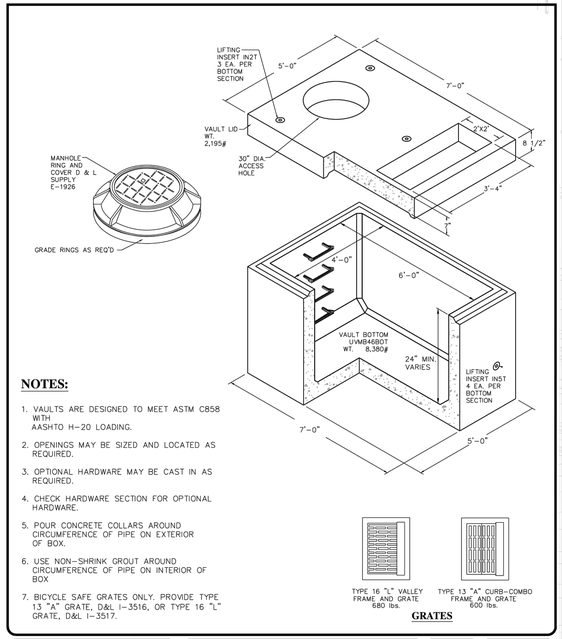
5. POUR CONCRETE COLLARS AROUND CIRCUMFERENCE OF PIPE ON EXTERIOR OF BOX.

6. USE NON-SHRINK GROUT AROUND CIRCUMFERENCE OF PIPE ON INTERIOR OF BOX

GUTTER INLET BOX

DATE: FEBRUARY 2013	REVISIONS			
DRAWING NAME: SD-2	REV	DATE	BY	COMMENTS
DRAWN BY: CJG				
CHECKED: APPROVED:	SARATOGA SPRINGS CITY — 1307 N. COMMERCE DR., 85045, SARATOGA SPRINGS, UT 84045; PHONE: 801-766-9793; FAX: 801-766-9774			

STANDARD DETAILS — STORM DRAIN — **SD-2**



NOTES:

1. VAULTS ARE DESIGNED TO MEET ASTM C858 WITH AASHTO H-20 LOADING.

2. OPENINGS MAY BE SIZED AND LOCATED AS REQUIRED.

3. OPTIONAL HARDWARE MAY BE CAST IN AS REQUIRED.

4. CHECK HARDWARE SECTION FOR OPTIONAL HARDWARE.

5. POUR CONCRETE COLLARS AROUND CIRCUMFERENCE OF PIPE ON EXTERIOR OF BOX.

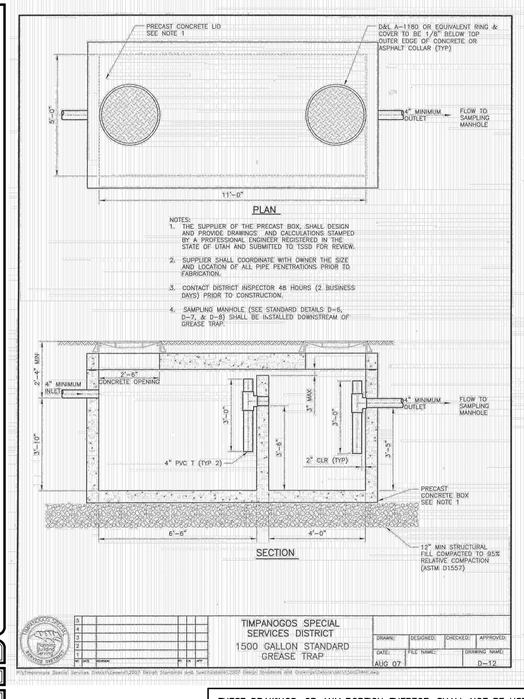
6. USE NON-SHRINK GROUT AROUND CIRCUMFERENCE OF PIPE ON INTERIOR OF BOX

7. BICYCLE SAFE GRATES ONLY. PROVIDE TYPE 13 "A" GRATE, D&L I-3516, OR TYPE 16 "L" GRATE, D&L I-3517.

COMBINATION GUTTER INLET & CLEANOUT BOX

DATE: APRIL 2014	REVISIONS			
DRAWING NAME: SD-4	REV	DATE	BY	COMMENTS
DRAWN BY: ETL				
CHECKED: APPROVED:	SARATOGA SPRINGS CITY — 1307 N. COMMERCE DR., 85045, SARATOGA SPRINGS, UT 84045; PHONE: 801-766-9793; FAX: 801-766-9774			

STANDARD DETAILS — STORM DRAIN — **SD-4**



THESE DRAWINGS, OR ANY PORTION THEREOF, SHALL NOT BE USED ON ANY PROJECT OR EXTENSIONS OF THIS PROJECT EXCEPT BY AGREEMENT IN WRITING WITH NORTHERN ENGINEERING, INC.

NO.	REVISIONS	DATE	BY	APP.

Northern ENGINEERING INC
ENGINEERING-LAND PLANNING
CONSTRUCTION MANAGEMENT

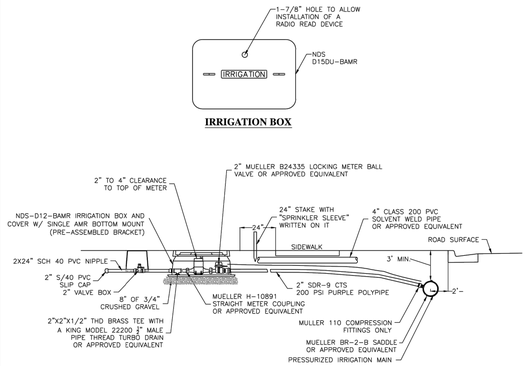
K:\3-11-037-00 Saratoga Medical\CAD\Final\DETAIL_02.dwg 6/22/2015 1:52 PM

TIMES SQUARE AT SARATOGA
PROJECT LOCATED IN SARATOGA SPRINGS, UTAH
NW 1/4 SECTION 23, T 5S, R 1W SLB&M
AT XXXXX 400 NORTH STREET

DETAILS

NORTHERN ENGINEERING INC
1040 EAST 800 NORTH
OREM, UTAH 84097
801.802.8992
fax:801.802.8993

DATE: 6/22/15
SCALE: 1" = 30 FT
JOB NO.: 3-11-037
DESIGNED BY:
DRAWN BY: JM
SHEET NAME: DETAIL_02
SHEET: DT-02



NOTES:

1. ADJUST ALL APPURTENCES TO AN EQUIVALENT $1\frac{1}{2}$" SIZE FOR $1\frac{1}{2}$" SERVICES.
2. SPRINKLER SLEEVE SHALL NOT BE IN LINE WITH ANY UTILITY BOXES.
3. ALL PIPES SHALL BE BURIED WITH 14 GAUGE STRANDED THHN TRACE WIRE AND MAGNETIC MARKING TAPE.

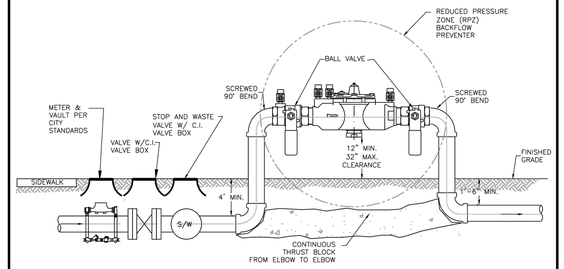
2" SERVICE LATERAL

DATE: APRIL 2014 | DRAWING NAME: PI-6 | DRAWN BY: ETL | CHECKED: | APPROVED:

REVISIONS: REV | DATE | BY | COMMENTS

SARATOGA SPRINGS CITY — 1307 N. COMMERCE DR. #300, SARATOGA SPRINGS, UT 84045 PH: 801-766-9793 FAX: 801-766970

STANDARD DETAILS — PRESSURIZED IRR — **PI-6**



NOTES:

1. TO BE USED WHEN SECONDARY SERVICE IS CONNECTED TO THE CULINARY SYSTEM.
2. RPZ VALVE ASSEMBLY & PIPES TO MATCH SECONDARY LATERAL SIZE.
3. ABOVE GROUND FITTINGS TO BE EPOXY PAINTED. BLUE ON CULINARY SIDE, PURPLE ON SECONDARY SIDE
4. SHOP DRAWINGS TO BE SUBMITTED TO SARATOGA SPRINGS CITY ENGINEER FOR APPROVAL PRIOR TO SHIPMENT.
5. THE RPZ ASSEMBLY DETAIL SHALL BE VERIFIED PER MANUFACTURER RECOMMENDATIONS
6. PROVIDE BOLLARDS OR OTHER PROTECTION IF AND AS DIRECTED BY CITY INSPECTOR.

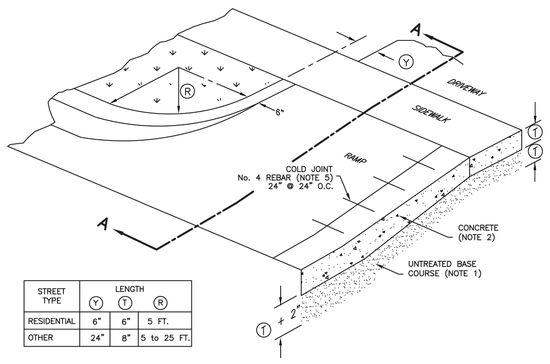
BACKFLOW PREVENTER FOR SERVICE LATERALS

DATE: FEBRUARY 2013 | DRAWING NAME: SW-10 | DRAWN BY: CJG | CHECKED: | APPROVED:

REVISIONS: REV | DATE | BY | COMMENTS

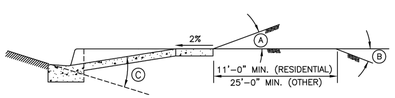
SARATOGA SPRINGS CITY — 1307 N. COMMERCE DR. #300, SARATOGA SPRINGS, UT 84045 PH: 801-766-9793 FAX: 801-766970

STANDARD DETAILS — SECONDARY WATER — **SW-10**



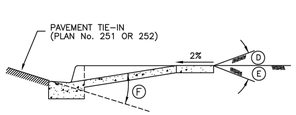
STREET TYPE	LENGTH Y	LENGTH T	LENGTH R
RESIDENTIAL	6"	6"	5 FT.
OTHER	24"	8"	5 to 25 FT.

OBLIQUE



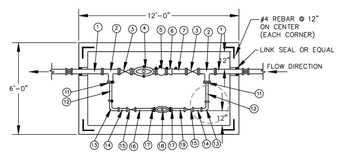
STREET TYPE	BREAKOVER ANGLE (MAXIMUM) A	B	C
RESIDENTIAL	16%	12%	16%
OTHER	6%	8%	10%

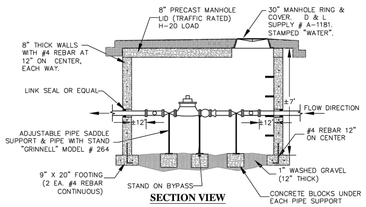
SECTION A–A – APPROACH REQUIRING SERVICE TRUCK ACCESS



STREET TYPE	BREAKOVER ANGLE (MAXIMUM) D	E	F
RESIDENTIAL	16%	12%	16%
OTHER	6%	8%	10%

SECTION A–A – TYPICAL DRIVEWAY APPROACH





NOTES:

1. INSPECTION: METER BOX AND SERVICE LINE SHALL BE INSPECTED BY CITY PRIOR TO BACKFILLING.
2. BACKFILL: INSTALL BACKFILL IN LIFTS NOT EXCEEDING 8" AFTER COMPACTION. COMPACT EACH LIFT TO AN AVERAGE DRY DENSITY OF 97% WITH NO DENSITY TEST RESULT LESS THAN 92%
3. ALL 4" INTERIOR FITTINGS TO BE FLANGED AND ALL 2" INTERIOR FITTINGS TO BE BRASS, SCHEDULE 40 (THREADED).
4. PLACEMENT: ALL METERS ARE TO BE INSTALLED IN THE PARK STRIP, MUST BE PLACED NEAR MIDPOINT OF THE LOT AND MUST NOT BE LOCATED IN A DRIVEWAY OR IN A SIDEWALK.
6. CONTRACTOR SHALL SUPPLY ALL MATERIALS AND LABOR EXCLUDING METER

6" PIPE SCHEDULE

#	QTY	DESCRIPTION
1	1	FLxPE D.I. SPOOL LENGTH = ±48"
2	1	6"x6"x2" FLGD. TEE
3	1	6" FLxFL GATE VALVE (MUELLER)*
4	1	6" FLxFL METER**
5	1	FLANGED METER STRAINER
6	1	6" FLANGED COUPLING ADAPTER
7	1	FLXPE DI SPOOL, LENGTH AS NEEDED

2" PIPE SCHEDULE

#	QTY	DESCRIPTION
11	2	4" BLIND FLANGE W\2" TAP
12	2	±23" NIPPLE
13	2	2" 90° ELBOW
14	2	2"x6" NIPPLE
15	2	2" GATE VALVE (MUELLER) #2380-8*
16	1	2" x ±21.5" NIPPLE
17	2	2" SCREW-ON FLANGE
18	1	METER**
19	1	2" NIPPLE (LENGTH AS NEEDED)

* GATE VALVE SHALL BE FURNISHED WITH A HANDWHEEL.
** SUPPLIED BY CITY

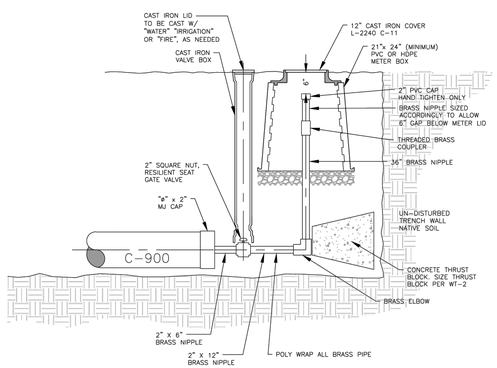
6 INCH METER AND VAULT WITH 2" BYPASS FOR 6" LATERALS

DATE: FEBRUARY 2013 | DRAWING NAME: WT-8 | DRAWN BY: CJG | CHECKED: | APPROVED:

REVISIONS: REV | DATE | BY | COMMENTS

SARATOGA SPRINGS CITY — 1307 N. COMMERCE DR. #300, SARATOGA SPRINGS, UT 84045 PH: 801-766-9793 FAX: 801766970

STANDARD DETAILS — CULINARY WATER — **WT-8**



2 INCH BLOW-OFF VALVE

DATE: APRIL 2014 | DRAWING NAME: CW-13 | DRAWN BY: ETL | CHECKED: | APPROVED:

REVISIONS: REV | DATE | BY | COMMENTS

SARATOGA SPRINGS CITY — 1307 N. COMMERCE DR. #300, SARATOGA SPRINGS, UT 84045 PH: 801-766-9793 FAX: 801766970

STANDARD DETAILS — CULINARY WATER — **CW-13**

NO.	REVISIONS	DATE	BY	APP.

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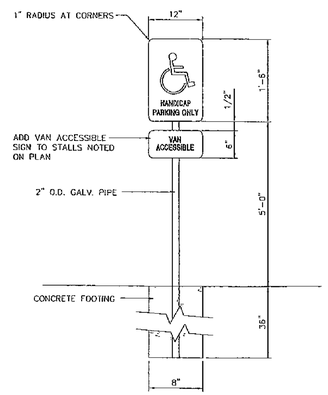
Northern ENGINEERING INC
ENGINEERING–LAND PLANNING
CONSTRUCTION MANAGEMENT

TIMES SQUARE AT SARATOGA
PROJECT LOCATED IN SARATOGA SPRINGS, UTAH
NW 1/4 SECTION 23, T 5S R 1W SLB&M
AT 11140 NORTH REDWOOD ROAD

DETAILS

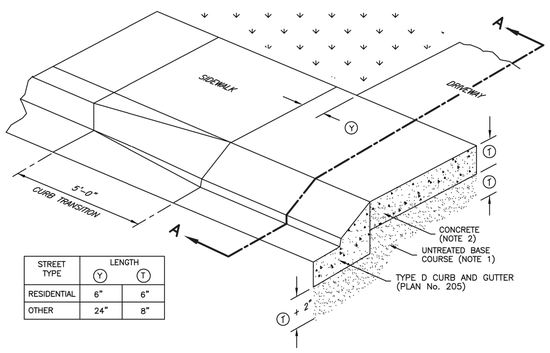
NORTHERN ENGINEERING INC
1040 EAST 800 NORTH
OREM, UTAH 84097
801.802.8992
fax: 801.802.8993

DATE: 6/22/15
SCALE: 1" = 30 FT
JOB NO.: 3-11-037
DESIGNED BY:
DRAWN BY: JM
SHEET NAME: DETAIL_03
SHEET: DT-03



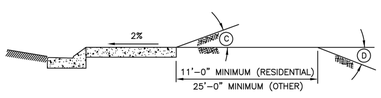
DISABLED PARKING SIGN

SCALE: NTS



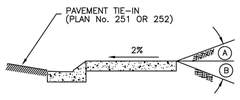
STREET TYPE	LENGTH Y	LENGTH T
RESIDENTIAL	6"	6"
OTHER	24"	8"

OBLIQUE



STREET TYPE	BREAKOVER ANGLE (MAXIMUM) C	BREAKOVER ANGLE (MAXIMUM) D
RESIDENTIAL	16%	13%
OTHER	6%	10%

SECTION A–A – APPROACH REQUIRING SERVICE TRUCK ACCESS

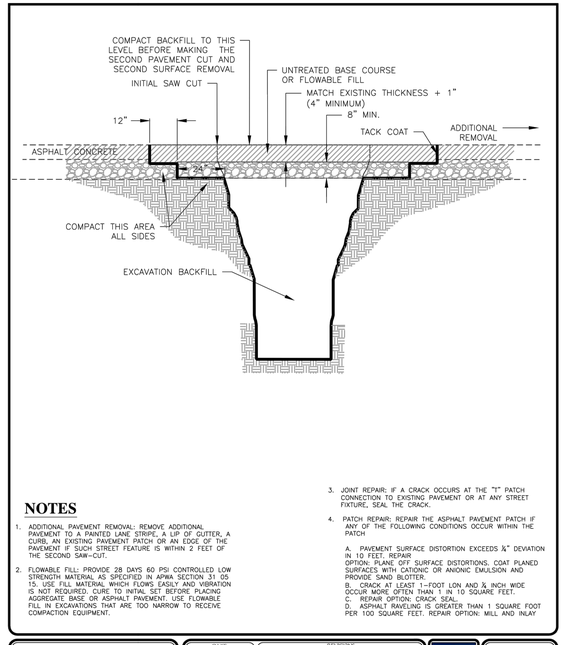


STREET TYPE	BREAKOVER ANGLE (MAXIMUM) A	BREAKOVER ANGLE (MAXIMUM) B
RESIDENTIAL	16%	12%
OTHER	6%	8%

SECTION A–A – TYPICAL DRIVEWAY APPROACH

Mountable curb driveway approach

Plan No.
216



NOTES

1. ADDITIONAL PAVEMENT REMOVAL: REMOVE ADDITIONAL PAVEMENT TO A PAINTED LANE STRIPE, A LIP OF GUTTER, A CURB, AN EXISTING PAVEMENT PATCH OR AN EDGE OF THE PAVEMENT IF SUCH STREET FEATURE IS WITHIN 2 FEET OF THE SECOND SAW-CUT.
2. FLOWABLE FILL: PROVIDE 28 DAYS 60 PSI CONTROLLED LOW STRENGTH MATERIAL AS SPECIFIED IN APWA SECTION 31 05 15. USE FILL MATERIAL WHICH FLOWS EASILY AND VIBRATION IS NOT REQUIRED. CURE TO INITIAL SET BEFORE PLACING AGGREGATE BASE OR ASPHALT PAVEMENT. USE FLOWABLE FILL IN EXCAVATIONS THAT ARE TOO NARROW TO RECEIVE COMPACTION EQUIPMENT.
3. JOINT REPAIR: IF A CRACK OCCURS AT THE "T" PATCH CONNECTION TO EXISTING PAVEMENT OR AT ANY STREET FIXTURE, SEAL THE CRACK.
4. PATCH REPAIR: REPAIR THE ASPHALT PAVEMENT PATCH IF ANY OF THE FOLLOWING CONDITIONS OCCUR WITHIN THE PATCH

   A. PAVEMENT SURFACE DISTORTION EXCEEDS ¼" DEVIATION IN 10 FEET. REPAIR OPTION: PLANE OFF SURFACE DISTORTIONS. COAT PLANED SURFACES WITH CATIONIC OR ANIONIC EMULSION AND PROVIDE SAND BLOTTER.
   B. CRACK AT LEAST 1-FOOT LON AND ¼ INCH WIDE OCCUR MORE OFTEN THAN 1 IN 10 SQUARE FEET.
   C. REPAIR OPTION: CRACK SEAL.
   D. ASPHALT RAVELING IS GREATER THAN 1 SQUARE FOOT PER 100 SQUARE FEET. REPAIR OPTION: MILL AND INLAY

STANDARD TEE PATCH

DATE	APRIL 2014
DRAWING NAME	ST-26
DRAWN BY	ETL
CHECKED	APPROVED

REVISIONS

NO.	DATE	BY	COMMENTS

SARATOGA SPRINGS CITY

1307 N. COMMERCE DR.
SUITE 200 SARATOGA SPRINGS, UT 84045
PHONE: 801-766-9793
FAX: 801-766-9794

STANDARD DETAILS

STREET STANDARDS

ST-26

THESE DRAWINGS, OR ANY PORTION THEREOF, SHALL NOT BE USED ON ANY PROJECT OR EXTENSIONS OF THIS PROJECT EXCEPT BY AGREEMENT IN WRITING WITH NORTHERN ENGINEERING, INC.

NO.	REVISIONS	DATE	BY	APP.

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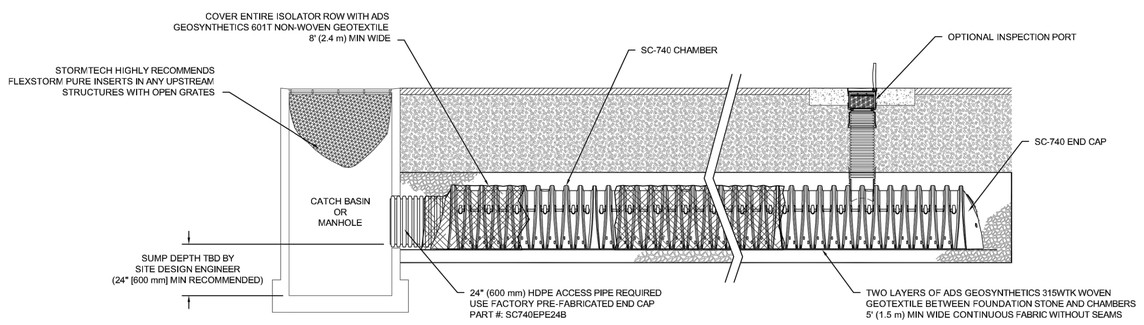
Northern ENGINEERING INC
ENGINEERING–LAND PLANNING
CONSTRUCTION MANAGEMENT

TIMES SQUARE AT SARATOGA
PROJECT LOCATED IN SARATOGA SPRINGS, UTAH
NW 1/4 SECTION 23, T 5S, R 1W, SLB&M
AT 1140 NORTH REDWOOD ROAD

DETAILS

NORTHERN ENGINEERING INC
1040 EAST 800 NORTH
OREM, UTAH 84097
801.802.8992
fax:801.802.8993

DATE: 6/22/15
SCALE: 1" = 30 FT
JOB NO.: 3-11-037
DESIGNED BY:
DRAWN BY: JM
SHEET NAME: DETAIL_04
SHEET: DT-04



SC-740 ISOLATOR ROW DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

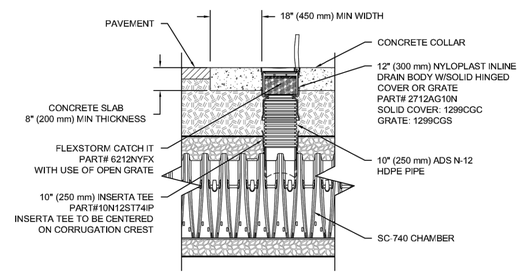
STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



SC-740 INSPECTION PORT DETAIL
NTS

SC-740
ISOLATOR ROW DETAILS

REV	DRW	CHK	DESCRIPTION

DATE: 11/18/14 | DRAWN: JLM
PROJECT #: | CHECKED: JLM

StormTech
70 INWOOD ROAD, SUITE 3 | ROCKY HILL, CT | 06067
800.628.8188 | 888.892.2694 | WWW.STORMTECH.COM

ADS
4640 TRUEMAN BLVD
HILLIARD, OH 43026
1.800.733.7473

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SHEET
1 OF 1

TIMES SQUARE AT SARATOGA
PROJECT LOCATED IN SARATOGA SPRINGS, UTAH
NW 1/4 SECTION 23, T 5S R 1W SL B&M
AT 1140 NORTH REDWOOD ROAD

DETAILS

NORTHERN ENGINEERING INC
1040 EAST 800 NORTH
OREM, UTAH 84097
801.802.8992
fax: 801.802.8993

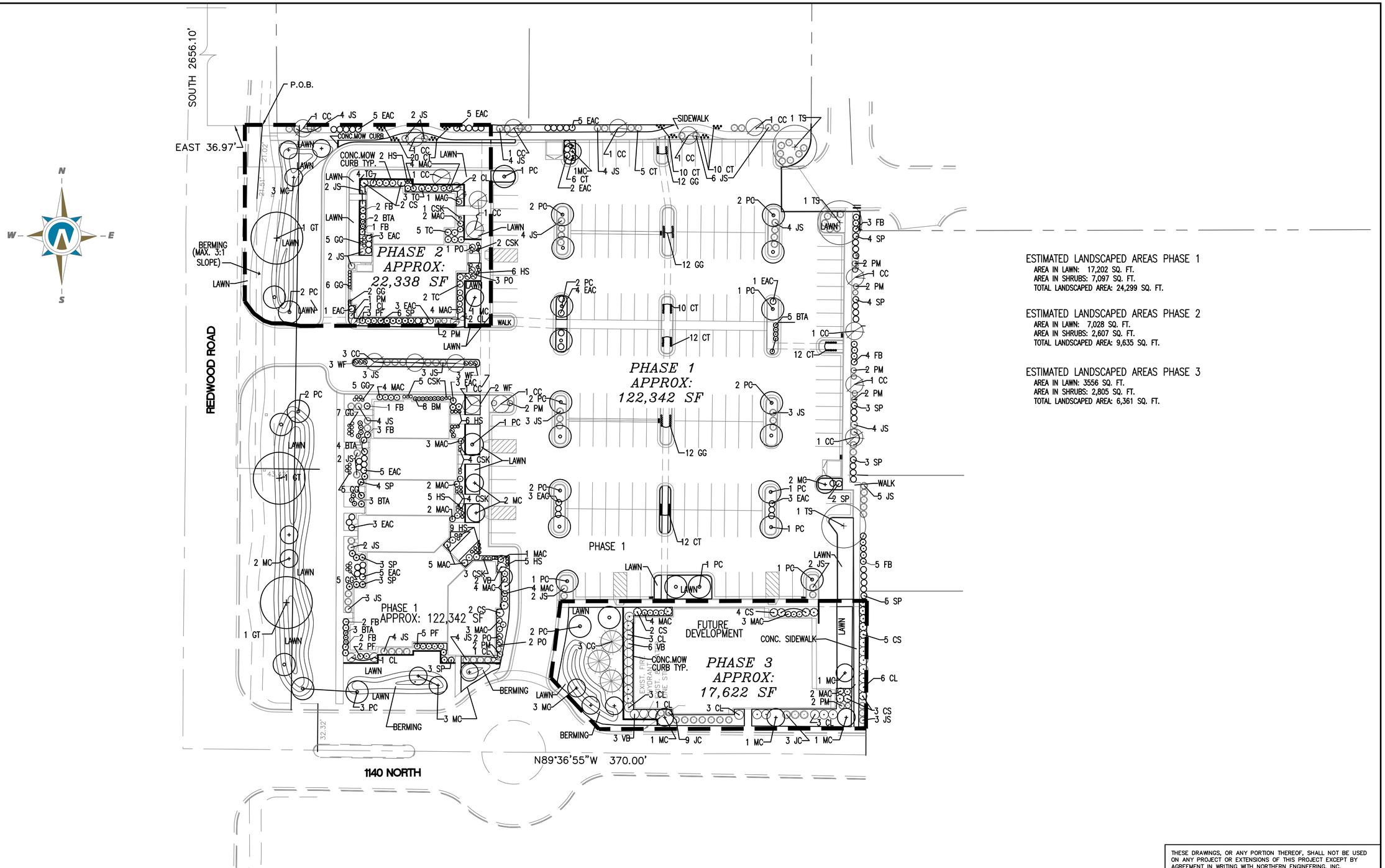
NO.	REVISIONS	DATE	BY	APP.

Northern ENGINEERING INC
ENGINEERING–LAND PLANNING
CONSTRUCTION MANAGEMENT

K:\3-11-037-00 Saratoga Medical\CAD\Final\DETAIL_05.dwg 6/22/2015 1:48 PM

DATE: 6/22/15
SCALE: 1" = 30 FT
JOB NO.: 3-11-037
DESIGNED BY:
DRAWN BY: JM
SHEET NAME: DETAIL_05
SHEET: DT-05

THESE DRAWINGS, OR ANY PORTION THEREOF, SHALL NOT BE USED ON ANY PROJECT OR EXTENSIONS OF THIS PROJECT EXCEPT BY AGREEMENT IN WRITING WITH NORTHERN ENGINEERING, INC.



ESTIMATED LANDSCAPED AREAS PHASE 1
AREA IN LAWN: 17,202 SQ. FT.
AREA IN SHRUBS: 7,097 SQ. FT.
TOTAL LANDSCAPED AREA: 24,299 SQ. FT.

ESTIMATED LANDSCAPED AREAS PHASE 2
AREA IN LAWN: 7,028 SQ. FT.
AREA IN SHRUBS: 2,607 SQ. FT.
TOTAL LANDSCAPED AREA: 9,635 SQ. FT.

ESTIMATED LANDSCAPED AREAS PHASE 3
AREA IN LAWN: 3556 SQ. FT.
AREA IN SHRUBS: 2,805 SQ. FT.
TOTAL LANDSCAPED AREA: 6,361 SQ. FT.

THESE DRAWINGS, OR ANY PORTION THEREOF, SHALL NOT BE USED ON ANY PROJECT OR EXTENSIONS OF THIS PROJECT EXCEPT BY AGREEMENT IN WRITING WITH NORTHERN ENGINEERING, INC.

NO.	REVISIONS	BY	DATE
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4			
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1			

DESIGNED BY: R. HUISH	DATE: 6/5/14	REV. COGO FILE:	DATE:
DRAWN BY: R. HUISH	DATE: 6/5/14		
CHECKED BY:	DATE:		
APPROVED:	DATE:		
COGO FILE:	DATE:		

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Northern ENGINEERING INC
ENGINEERING-LAND PLANNING
CONSTRUCTION MANAGEMENT

1040 E. 800 N.
OREM, UTAH 84097
(801) 802-8992

TIMES SQUARE AT SARATOGA SPRINGS

LANDSCAPE PLAN

SARATOGA SPRINGS, UTAH

JOB NO. 3-11-037

SHEET NO. LS-01

PLANT LEGEND PHASE 1

QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS	
TREES						
0	CG	CEDRUS ATLANTICA 'GLAUCA'	BLUE ATLAS CEDAR	5' TALL	B&B	DT EG
5	GT	GLEDITSIA TRIACANTHOS 'IMPERIAL'	IMPERIAL HONEY LOCUST	2.5" CAL.	B&B	DT
4	TS	TILIA TOMENTOSA 'STERLING SILVER'	STERLING SILVER LINDEN	2.5" CAL.	B&B	DT
29	PC	PRYUS CALLERYANA "CHANTICLEER'	CHANTICLEER FLOWERING PEAR	2.5" CAL.	B&B	DT
12	CC	CERCIS CANADENSIS 'EASTERN'	EASTERN REDBUD	2.5" CAL.	B&B	DT
12	MC	MALUS BECHTEL	KLEHM'S BECHTEL	2.5" CAL.	B&B	DT
SHRUBS						
18	BTA	BERBERIS THUNBERGII ATROPURPUREA 'ROSE GLOW'	RED LEAF BARBERRY	1 GAL.	3' O.C.	DT
0	BM	BUXUS MICROPHLLA ASIATIC 'WINTER GEM'	WINTER GEM BOXWOOD	1 GAL.	2.5' O.C.	DT EG
6	CS	CORNUS SERICEA	RED OSIER DOGWOOD	5 GAL.	6' O.C.	
19	CSK	CORNUS SERICEA 'KELSEYI'	KELSEYI DOGWOOD	1 GAL.	3' O.C.	DT
7	CL	COTONEASTER LUCIDUS	PEKING COTONEASTER	5 GAL.	5' O.C.	DT
106	CT	COTONEASTER APICULATA 'TOM THUMB'	TOM THUMB COTONEASTER	1 GAL.	18" O.C.	
139	EAC	EUONYMOUS ALATAS 'COMPACTA'	DWARF BURNING BUSH	1 GAL.	5' O.C.	DT
23	FB	FORSYTHIA VIRIDISSIMA 'BRONX'	DWARF BRONX FORSYTHIA	1 GAL	4' O.C.	DT
0	JC	JUNIPERUS CHINENSIS 'SEA GREEN'	SEA GREEN JUNIPER	5 GAL	6' O.C.	DT EG
84	JS	JUNIPERUS SABINA 'BROADMOOR'	BROADMOOR JUNIPER	1 GAL	5' O.C.	DT EG
15	MAC	MAHONIA AQUIFOLIUM 'COMPACTA'	COMPACT OREGON GRAPE	1 GAL.	4' O.C.	DT EG
16	PM	PINUS MUGHO MUGUS 'PUMILIO'	DWARF MUGO PINE	1 GAL.	4' O.C.	DT
31	PF	POTENTILLA FRUTICOSA 'DAKOTA SUNSPOT'	SUNSPOT CINQUEFOIL	1 GAL	42" O.C.	DT
8	PO	PRUNUS LAUROCERASUS "OTTO LUYKENS'	OTTO LUYKENS LAUREL	1 GAL	4' O.C.	EG
49	SP	SYRINGA PATULA 'MISS KIM'	MISS KIM LILAC	1 GAL	4' O.C.	DT
16	TC	TAXUS CUSPIDATA DENSIFORMIS	DENSE JAPANESE YEW	1 GAL	4' O.C.	DT EG
0	VB	VIBURNUM BURKWOODI	BURKWOOD VIBURUM	5 GAL	5' O.C.	DT
9	WF	WEIGELA FLORIDA 'MINUET'	MINUET WEIGELA	1 GAL	3' O.C.	
PERENNIALS/ GROUND COVER/ VINE						
63	GG	GAILLARDIA GRANDIFLORA 'GOBLIN'	BLANKET FLOWER	1 GAL	2' O.C.	DT
23	HS	HEMEROCALLIS 'STELLA DE ORO'	DAY LILLY	1 GAL	30" O.C.	DT

DT DROUGHT TOLERANT PLANT EG EVERGREEN PLANT

LANDSCAPE TABULATION:

LANDSCAPED LOT:
LANDSCAPED AREA IN LAWN: 21,735 SQ. FT.
LANDSCAPED AREA IN SHRUBS & GROUND COVERS: 11,240 SQ. FT.
TOTAL LANDSCAPED LOT AREA: 32,975 SQ. FT.

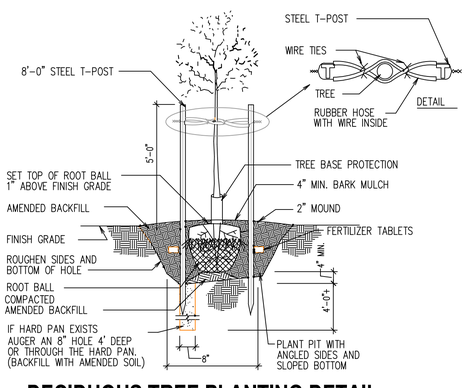
PLANT LEGEND PHASE 2

QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS	
TREES						
3	CG	CEDRUS ATLANTICA 'GLAUCA'	BLUE ATLAS CEDAR	5' TALL	B&B	DT EG
0	GT	GLEDITSIA TRIACANTHOS 'IMPERIAL'	IMPERIAL HONEY LOCUST	2.5" CAL.	B&B	DT
0	TS	TILIA TOMENTOSA 'STERLING SILVER'	STERLING SILVER LINDEN	2.5" CAL.	B&B	DT
2	PC	PRYUS CALLERYANA "CHANTICLEER'	CHANTICLEER FLOWERING PEAR	2.5" CAL.	B&B	DT
0	CC	CERCIS CANADENSIS 'EASTERN'	EASTERN REDBUD	2.5" CAL.	B&B	DT
7	MC	MALUS BECHTEL	KLEHM'S BECHTEL	2.5" CAL.	B&B	DT
SHRUBS						
0	BTA	BERBERIS THUNBERGII ATROPURPUREA 'ROSE GLOW'	RED LEAF BARBERRY	1 GAL.	3' O.C.	DT
0	BM	BUXUS MICROPHLLA ASIATIC 'WINTER GEM'	WINTER GEM BOXWOOD	1 GAL.	2.5' O.C.	DT EG
13	CS	CORNUS SERICEA	RED OSIER DOGWOOD	5 GAL.	6' O.C.	
0	CSK	CORNUS SERICEA 'KELSEYI'	KELSEYI DOGWOOD	1 GAL.	3' O.C.	DT
15	CL	COTONEASTER LUCIDUS	PEKING COTONEASTER	5 GAL.	5' O.C.	DT
0	CT	COTONEASTER APICULATA 'TOM THUMB'	TOM THUMB COTONEASTER	1 GAL.	18" O.C.	
0	EAC	EUONYMOUS ALATAS 'COMPACTA'	DWARF BURNING BUSH	1 GAL.	5' O.C.	DT
0	FB	FORSYTHIA VIRIDISSIMA 'BRONX'	DWARF BRONX FORSYTHIA	1 GAL	4' O.C.	DT
12	JC	JUNIPERUS CHINENSIS 'SEA GREEN'	SEA GREEN JUNIPER	5 GAL	6' O.C.	DT EG
3	JS	JUNIPERUS SABINA 'BROADMOOR'	BROADMOOR JUNIPER	1 GAL	5' O.C.	DT EG
9	MAC	MAHONIA AQUIFOLIUM 'COMPACTA'	COMPACT OREGON GRAPE	1 GAL.	4' O.C.	DT EG
2	PM	PINUS MUGHO MUGUS 'PUMILIO'	DWARF MUGO PINE	1 GAL.	4' O.C.	DT
0	PF	POTENTILLA FRUTICOSA 'DAKOTA SUNSPOT'	SUNSPOT CINQUEFOIL	1 GAL	42" O.C.	DT
0	PO	PRUNUS LAUROCERASUS "OTTO LUYKENS'	OTTO LUYKENS LAUREL	1 GAL	4' O.C.	EG
0	SP	SYRINGA PATULA 'MISS KIM'	MISS KIM LILAC	1 GAL	4' O.C.	DT
0	TC	TAXUS CUSPIDATA DENSIFORMIS	DENSE JAPANESE YEW	1 GAL	4' O.C.	DT EG
9	VB	VIBURNUM BURKWOODI	BURKWOOD VIBURUM	5 GAL	5' O.C.	DT
0	WF	WEIGELA FLORIDA 'MINUET'	MINUET WEIGELA	1 GAL	3' O.C.	
PERENNIALS/ GROUND COVER/ VINE						
0	GG	GAILLARDIA GRANDIFLORA 'GOBLIN'	BLANKET FLOWER	1 GAL	2' O.C.	DT
0	HS	HEMEROCALLIS 'STELLA DE ORO'	DAY LILLY	1 GAL	30" O.C.	DT

DT DROUGHT TOLERANT PLANT EG EVERGREEN PLANT

LANDSCAPE TABULATION:

LANDSCAPED LOT:
LANDSCAPED AREA IN LAWN: 7,028 SQ. FT.
LANDSCAPED AREA IN SHRUBS & GROUND COVERS: 2,607 SQ. FT.
TOTAL LANDSCAPED LOT AREA: 9,636 SQ. FT.



DECIDUOUS TREE PLANTING DETAIL
SCALE: NONE

LANDSCAPE NOTES:

1: TOP DRESS ALL SHRUB AREAS W/4" LAYER OF BARK MULCH. BARK MULCH SHALL BE APPLIED PRE-EMERGENT AND WEED BARRIER FABRIC HAS BEEN APPLIED. WEED BARRIER FABRIC TO ALLOW MAXIMUM AIR AND WATER PENETRATION.

2: PROVIDE A 6' DIAMETER MULCH AREA AROUND EVERGREEN TREES AND A 4' DIAMETER AROUND DECIDUOUS TREES.

3: VERIFY LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.

4: ALL PLANT MATERIAL SHALL BE HEALTHY STOCK, FREE FROM DISEASE AND DISFIGUREMENT, HAVING FULL NATURAL SHAPES.

5: PLANT MATERIAL SHALL BE THE SAME SPECIES AND SIZE AS DESCRIBED IN THE PLANT SCHEDULE.

6: ALL TREES AND SHRUBS TO BE PLANTED ACCORDING TO DETAILS.

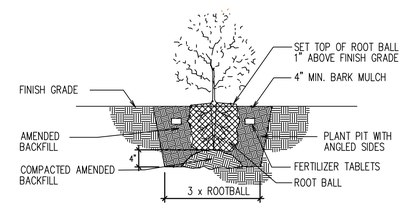
7: ALL LANDSCAPED AREAS TO BE IRRIGATED WITH AN AUTOMATED IRRIGATION SYSTEM THAT MEETS CITY CODES, REFER TO IRRIGATION PLAN. THE CONTRACTOR MUST PROVIDE A DETAILED IRRIGATION PLAN FOR SUBMITTAL AND APPROVAL BY THE CITY, PRIOR TO SYSTEM INSTALLATION.

8: PROVIDE 4" THICK TOPSOIL FOR ALL LAWN AREAS AND 12" THICK TOPSOIL FOR SHRUB AREAS.

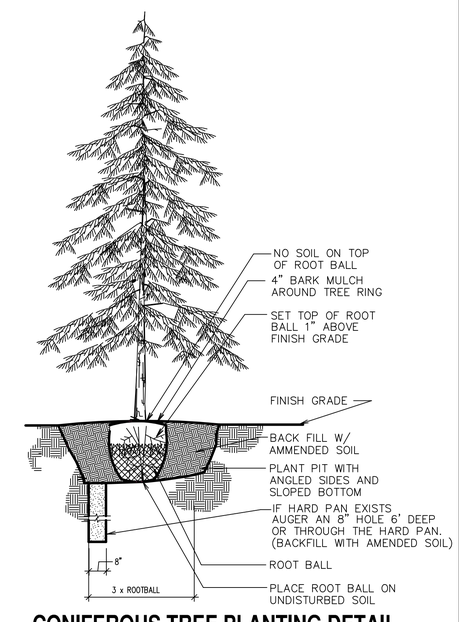
9: ALL LAWN AREAS TO BE SEEDED WITH 'GRANITE SEED BLUE RIBBON HOUSE BLEND' AND CONSIST OF 80% KENTUCKY BLUE AND 20% PERENNIAL RYE SEED. APPLY AT A RATE OF 5 LBS/ 1000 SQ. FEET.

10: DECIDUOUS TREES ALONG STREET SIDEWAK TO BE CLEAR BRANCHED TO A HEIGHT OF EIGHT FEET.

11: EVERGREEM TREES TO BE A MIM. OF 5' IN HEIGHT



SHRUB PLANTING DETAIL
SCALE: NONE



CONIFEROUS TREE PLANTING DETAIL
SCALE: NONE

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NO.	REVISIONS	BY	DATE
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DESIGNED BY: R. HUISH DATE: 11/17/15
DRAWN BY: R. HUISH DATE: 11/17/15
CHECKED BY: DATE:
APPROVED: DATE:
COGO FILE: DATE:
REV. COGO FILE: DATE:

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Northern ENGINEERING INC
ENGINEERING-LAND PLANNING
CONSTRUCTION MANAGEMENT
1040 E. 800 N.
OREM, UTAH 84097
(801) 802-8992

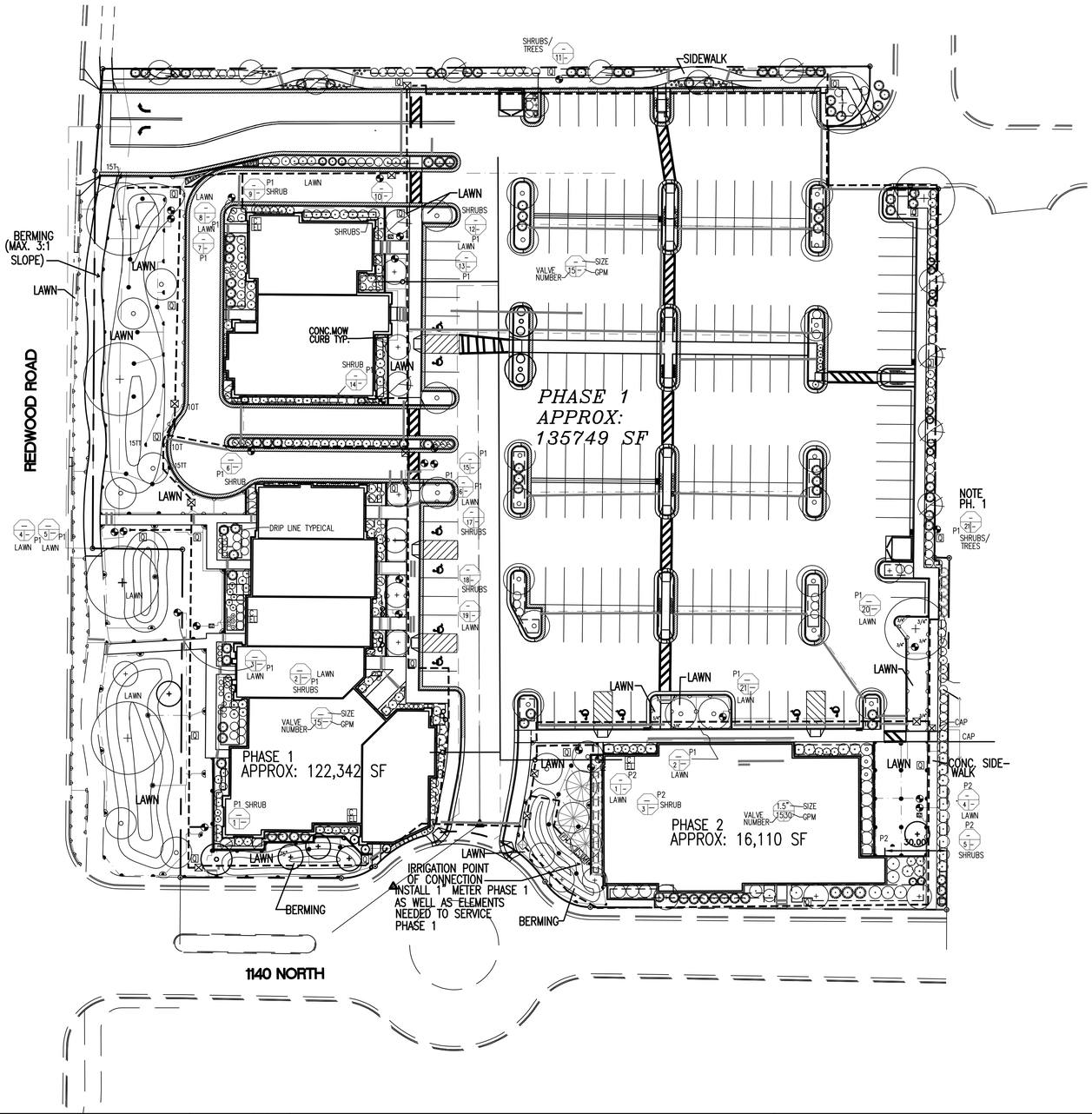
TIMES SQUARE AT SARATOGA SPRINGS

LANDSCAPE SCHEDULE & DETAILS

SARATOGA SPRINGS, UTAH

JOB NO. 3-11-037

SHEET NO. LS-02



ESTIMATED IRRIGATED AREAS PHASE 1
AREA IN LAWN: 21,735 SQ. FT.
AREA IN SHRUBS: 11,240 SQ. FT.
TOTAL LANDSCAPED AREA: 32,975 SQ. FT.

ESTIMATED IRRIGATED AREAS PHASE 2
AREA IN LAWN: 7,028 SQ. FT.
AREA IN SHRUBS: 2,607 SQ. FT.
TOTAL LANDSCAPED AREA: 9,635 SQ. FT.

IRRIGATION SCHEDULE

SYMBOL	DESCRIPTION	MANUFACT.	MODEL
	AUTOMATIC VALVE	RAINBIRD	100-PESB-PRS-D 150-PESB-PRS-D
C	CONTROLLER	RAINBIRD	WALL MOUNTED CONTROLLERS, TO BE MOUNTED ON WALL NOTED, ON INSIDE OF BUILDING (COORDINATE WITH ARCHITECT)
E	ELECTRICAL SOURCE		PROVIDE ELECTRICAL SOURCE TO CONTROLLER LOCATION
	REDUCED PRESSURE BACKFLOW ASSEMBLY	WILKINS	2" 1 ¾" 350 WATERMAN STAINLESS STEEL SCREEN
PR	PRESSURE REGULATOR	WILKINS	PRESSURE REGULATOR
S	STOP & WASTE VALVE	MUELLER	
G	2" ISOLATION VALVE	MUELLER	
QC	QUICK COUPLER	RAINBIRD	33DRC (NON-POTABLE)
DZ	DRIP ZONE KIT	RAINBIRD	
M	WATER METER	BADGER	2"

IRRIGATION HEAD SCHEDULE

SYMBOL	DESCRIPTION	MANUFACT.	MODEL	PSI	RAD.	GPM
	TURF HEADS	RAINBIRD	5000 MPR 25 RED FULL	45	25'	3.82
	TURF HEADS	RAINBIRD	5000 MPR 30 GREEN 1/2	45	30'	2.96
	TURF HEADS	RAINBIRD	5000 MPR 30 GREEN 1/3	45	30'	2.06
	TURF HEADS	RAINBIRD	5000 MPR 30 GREEN 1/4	45	30'	1.40
	TURF HEADS	RAINBIRD	1855T	30	15'	1.23
	TURF HEADS	RAINBIRD	1806NP-PRS-15F	30	15'	3.70
	TURF HEADS	RAINBIRD	1806NP-PRS-15H	30	15'	1.85
	TURF HEADS	RAINBIRD	1806NP-PRS-15Q	30	15'	.92
	TURF HEADS	RAINBIRD	1806NP-PRS-10H	30	10'	.79
	TURF HEADS	RAINBIRD	1806NP-PRS-10Q	30	8'	.39
	TURF HEADS	RAINBIRD	1855T STRIP	30	44X30	1.21
	TURF HEADS	RAINBIRD	1806-PRS-10Q	30	4X15	.49
	TURF HEADS	RAINBIRD	1806NP-PRS-8HWN	30	8'	1.19
	TURF HEADS	RAINBIRD	1806NP-PRS-8QWN	30	8'	0.72

NOTE: SEE SHEET IR2 FOR FULL NOTES & DETAILS

PVC SCH. 40 PIPE SLEEVE (TWO SIZES LARGER THAN PIPE BEING SLEEVED)

2" PVC SCH 40 MAIN LINE

SCH. 40 LATERAL LINE

DRIP LINE

LATERAL PIPE SIZING CRITERIA:
3/4" 0-8 GPM
1" 9-12 GPM
1 1/4" 13-22 GPM
1 1/2" 23-35 GPM
2" 36-50 GPM

VALVE NUMBER 1.5" SIZE 15 30 GPM

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NO.	REVISIONS	BY	DATE
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DESIGNED BY: R. HUISH	DATE: 11/23/15
DRAWN BY: R. HUISH	DATE: 11/24/15
CHECKED BY:	DATE:
APPROVED:	DATE:
COGO FILE:	DATE:
REV. COGO FILE:	DATE:

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Northern ENGINEERING INC
ENGINEERING-LAND PLANNING
CONSTRUCTION MANAGEMENT

1040 E. 800 N.
OREM, UTAH 84097
(801) 802-8992

TIMES SQUARE AT SARATOGA SPRINGS

IRRIGATION PLAN

SARATOGA SPRINGS, UTAH

JOB NO. 3-11-037

SHEET NO. IR-01

NOTE: IRRIGATION SYSTEM STARTS W/CULINARY WILL TRANSFER OVER TO SECONDARY WATER AT A TIME IN THE FUTURE.

IRRIGATION NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSURING PROPER COVERAGE OF ALL IRRIGATED AREAS.
2. THE IRRIGATION CONTRACTOR IS TO PROVIDE SHOP DRAWINGS OF IRRIGATION SYSTEM FOR APPROVAL BY THE LANDSCAPE ARCHITECT.
3. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO FAMILIARIZE HIMSELF WITH ALL GRADES, LOCATION OF WALKS, STRUCTURES AND UTILITIES. THE CONTRACTOR SHALL REPAIR OR REPLACE ALL ITEMS DAMAGED BY HIS WORK. HE SHALL COORDINATE HIS WORK WITH OTHER CONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE SLEEVES AND LATERAL LINES THROUGH WALLS, AND UNDER ROADWAYS AND PAVED AREAS. SLEEVES INSTALLED AT IMPROPER DEPTHS WILL HAVE TO BE RE-INSTALLED BY BORING METHODS.
4. CONTRACTOR TO PROVIDE ELECTRICAL CONDUIT IN VALVE WIRE AREAS WHERE THE WIRING IS NOT UNDER THE MAINLINE.
5. 120V AC ELECTRICAL POWER SOURCE AT THE CONTROLLER LOCATION SHALL BE PROVIDED BY OTHERS. THE IRRIGATION CONTRACTOR SHALL MAKE THE FINAL CONNECTION FROM THE ELECTRICAL SOURCE TO THE CONTROLLER.
6. THE IRRIGATION CONTRACTOR SHALL ADJUST VALVES, FLUSH AND ADJUST IRRIGATION HEADS FOR OPTIMUM COVERAGE WITH MINIMAL OVERSPRAY ONTO WALKS, STREETS AND WALLS.
7. POP-UP SPRAY HEADS TO 4" POP-UP IN LAWN AREAS. HEADS TO BE RAINBIRD OR HUNTER.
8. AUTOMATIC VALVES TO BE RAINBIRD PEB-PRS SERIES, OR HUNTER EQUAL.
9. THE OWNER RESERVES THE RIGHT TO REFUSE MATERIAL OR WORK WHICH DOES NOT CONFORM TO THESE DRAWINGS AND SPECIFICATIONS. REJECTED WORK SHALL BE REMOVED OR CORRECTED AS SOON AS POSSIBLE AT CONTRACTOR'S EXPENSE.
10. GUARANTEE: ALL WORK SHALL BE GUARANTEED & MAINTAINED (FOR ONE YEAR FROM DATE OF ACCEPTANCE AGAINST ALL DEFECTS IN MATERIAL, EQUIPMENT AND WORKMANSHIP. GUARANTEE SHALL ALSO COVER REPAIR FOR DAMAGE TO ANY PART OF THE PREMISES RESULTING FROM LEAKS OR OTHER DEFECTS IN MATERIAL, EQUIPMENT OR WORKMANSHIP, TO THE SATISFACTION OF THE OWNER. REPAIRS, IF REQUIRED, SHALL BE DONE PROMPTLY AND AT NO COST TO THE OWNER.
11. INSTALL CONTROLLERS AS SHOWN ON PLAN. IRRIGATION CONTRACTOR IS RESPONSIBLE FOR INSTALLING MOISTURE SENSORS, CONDUITS AND WIRING FROM VALVES TO CONTROLLERS.
12. VALVE WIRES TO CONTROLLERS SHALL BE 14 GAUGE.
13. THIS SPRINKLER PLAN IS DRAWN FOR GRAPHIC CLARITY WHERE PIPING, VALVES AND WIRING ARE SHOWN IN CONC. AND ASPHALT AREAS. EXCEPT WHERE CROSSING, THE INTENT IS FOR THE PIPING, VALVES AND WIRE TO BE PLACED IN THE ADJACENT PLANTING AREAS.
14. CONTRACTOR TO PROVIDE THREE ROD GROUND GRID AT CONTROLLER/PANEL LOCATIONS AS PER RAINBIRD/ HUNTER SPECIFICATIONS.
15. REFER TO PLANTING PLAN FOR COORDINATION WITH TREE PLANTING LOCATIONS.

IRRIGATION SCHEDULE

SYMBOL	DESCRIPTION	MANUFACT.	MODEL
	AUTOMATIC VALVE	RAINBIRD	100-PESB-PRS-D 150-PESB-PRS-D
C	CONTROLLER	RAINBIRD	WALL MOUNTED CONTROLLERS TO BE MOUNTED ON WALL NOTED, OR INSIDE OF BUILDING (COORDINATE WITH ARCHITECT)
EL	ELECTRICAL SOURCE		PROVIDE ELECTRICAL SOURCE TO CONTROLLER LOCATION
	REDUCED PRESSURE PRINCIPLE ASSEMBLY	WILKINS	2" 1 W/ 200 MICRON STAINLESS STEEL SCREEN
P	PRESSURE REGULATOR	WILKINS	PRESSURE REGULATOR
S	STOP & WASTE VALVE	MUELLER	
I	2" ISOLATION VALVE	MUELLER	
Q	QUICK COUPLER	RAINBIRD	33DRC (NON-POTABLE)
DZ	DRIP ZONE KIT	RAINBIRD	
M	METER	BADGER	2"

IRRIGATION HEAD SCHEDULE

SYMBOL	DESCRIPTION	MANUFACT.	MODEL	PSI	RAD.	GPM
	TURF HEADS	RAINBIRD	5000 MPR 25 RED FULL	45	25'	3.82
	TURF HEADS	RAINBIRD	5000 MPR 30 GREEN 1/2	45	30'	2.96
	TURF HEADS	RAINBIRD	5000 MPR 30 GREEN 1/3	45	30'	2.06
	TURF HEADS	RAINBIRD	5000 MPR 30 GREEN 1/4	45	30'	1.40
	TURF HEADS	RAINBIRD	U15T	30	15'	1.23
	TURF HEADS	RAINBIRD	1806NP-PRS-15F	30	15'	3.70
	TURF HEADS	RAINBIRD	1806NP-PRS-15H	30	15'	1.85
	TURF HEADS	RAINBIRD	1806NP-PRS-15Q	30	15'	0.92
	TURF HEADS	RAINBIRD	1806NP-PRS-10H	30	10'	.79
	TURF HEADS	RAINBIRD	1806NP-PRS-10Q	30	8'	.39
	TURF HEADS	RAINBIRD	15SST STRIP	30	4X30	1.21
	TURF HEADS	RAINBIRD	1806-PRS-10Q	30	4X15	.49
	TURF HEADS	RAINBIRD	1806NP-PRS-8QVAN	30	8'	1.19
	TURF HEADS	RAINBIRD	1806NP-PRS-8QVAN	30	6'	0.72

PVC SCH. 40 PIPE SLEEVE (TWO SIZES LARGER THAN PIPEBEING SLEEVED)

2" PVC SCH 40 MAIN LINE

SCH. 40 LATERAL LINE

DRIP LINE

LATERAL PIPE SIZING CRITERIA:

3/4"	0-8 GPM
1"	9-12 GPM
1 1/4"	13-22 GPM
1 1/2"	23-35 GPM
2"	36-50 GPM

PVC SCH. 40 PIPE SLEEVE (TWO SIZES LARGER THAN PIPE BEING SLEEVED)

MAIN PRESSURE LINE: 2" PVC SCH. 40 PIPE

LATERAL LINES (SIZE AS SHOWN)

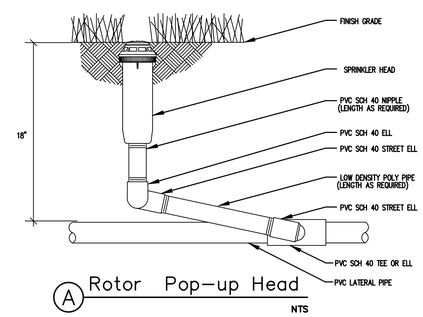
17 MM DRIP TUBE (1/2")

NOTE: ESTIMATED IRRIGATION AREA:
LAWN AREA: 22,343 SQ. FT.
SHRUB AREA: 12,508 SQ. FT.

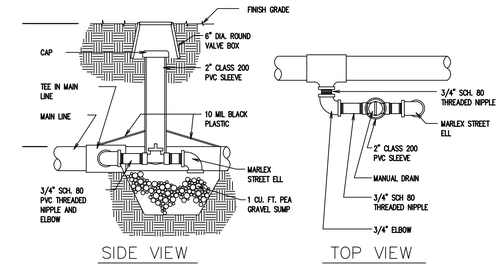
VALVE NUMBER — P3 — PHASE #; 1" — VALVE SIZE; 15 — GPM

AUTOMATIC VALVE
C — CONTROLLER/ MOISTURE SENSOR
EL — ELECTRICAL SOURCE
P — PRESSURE REGULATOR
S — STOP & WASTE VALVE
I — 2" ISOLATION VALVE
Q — QUICK COUPLER
REDUCED PRESSURE PRINCIPLE ASSEMBLY

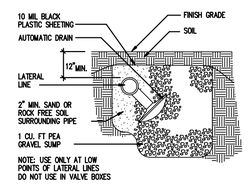
VALVE NUMBER — 1.5" — SIZE; 15 — GPM



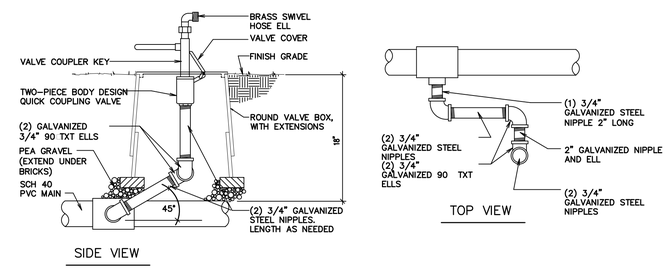
A Rotor Pop-up Head
NTS



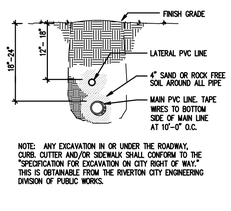
B Manual Drain Valve
NTS



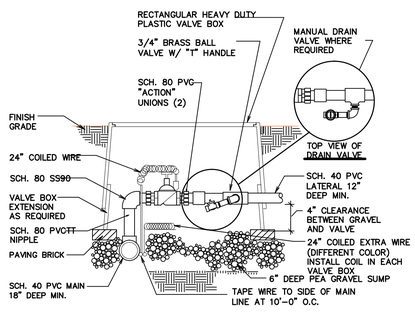
C Automatic Drain
NTS



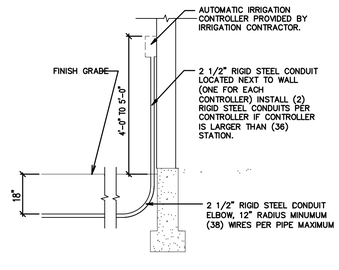
D Quick Coupling Valve
Detail NTS



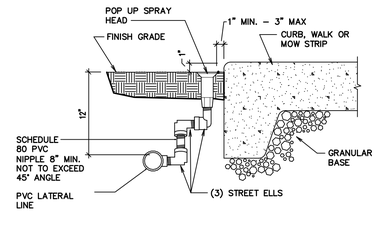
E Trench Section
NTS



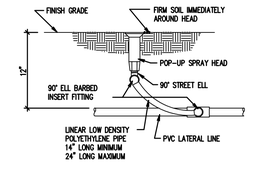
F Automatic Valve with Drain
NTS



G Outdoor Controller
NTS



H Spray Head Next to Curb or Walk
NTS



I Alternate Turf
NTS

THESE DRAWINGS, OR ANY PORTION THEREOF, SHALL NOT BE USED ON ANY PROJECT OR EXTENSIONS OF THIS PROJECT EXCEPT BY AGREEMENT IN WRITING WITH NORTHERN ENGINEERING, INC.

NO.	REVISIONS	BY	DATE
5			
4			
3			
2			
1			

DESIGNED BY: R. HUISH	DATE: 11/23/15
DRAWN BY: R. HUISH	DATE: 11/23/15
CHECKED BY:	DATE:
APPROVED:	DATE:
COGO FILE:	DATE:
REV. COGO FILE:	DATE:

K:\3-11-037-00 Saratoga Medical\CAD\Final\Final\IRRIGATION SCHEDULE.dwg 11/23/2015 12:22 PM

Northern ENGINEERING INC
ENGINEERING-LAND PLANNING
CONSTRUCTION MANAGEMENT
1040 E. 800 N.
OREM, UTAH 84097
(801) 802-8992

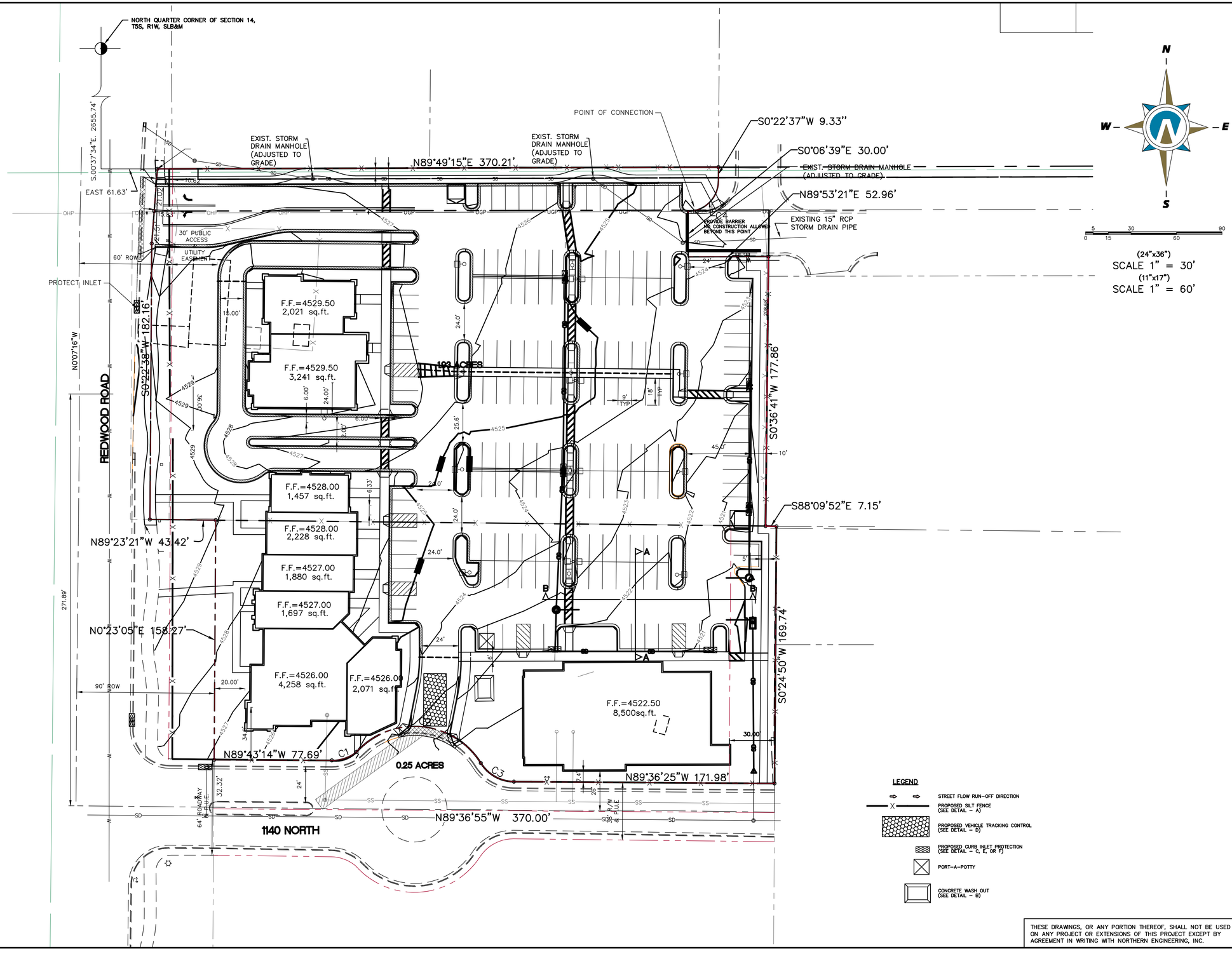
TIMES SQUARE AT SARATOGA SPRINGS

IRRIGATION SYSTEM NOTES & DETAILS

SARATOGA SPRINGS, UTAH

JOB NO. 3-11-057

SHEET NO. IR-02



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NO.	REVISIONS	DATE	BY	APP.

K:\3-11-037-00 Saratoga Medical\CAD\Final\Final\EROSION CONTROL.dwg 11/23/2015 11:19 AM

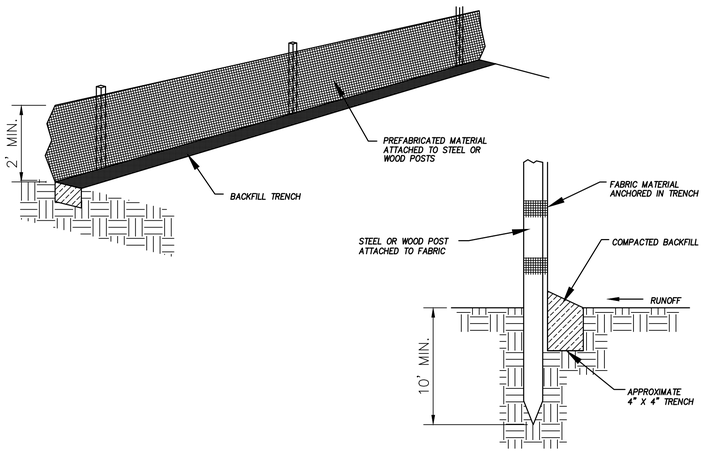
Northern ENGINEERING INC
ENGINEERING–LAND PLANNING
CONSTRUCTION MANAGEMENT

TIMES SQUARE AT SARATOGA
PROJECT LOCATED IN SARATOGA SPRINGS, UTAH
NW 1/4 SECTION 23, T 5S R 1W SLB&M
AT 1140 NORTH REDWOOD ROAD

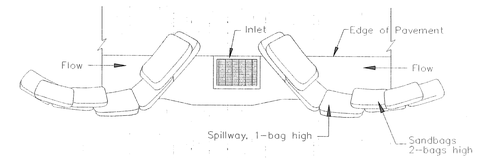
EROSION CONTROL PLAN

NORTHERN ENGINEERING INC
1040 EAST 800 NORTH
OREM, UTAH 84097
801.802.8992
fax:801.802.8993

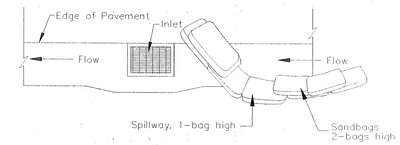
DATE: 11/23/15
SCALE: 1" = 30 FT
JOB NO.: 3-11-037-00
DESIGNED BY:
DRAWN BY: KEB
SHEET NAME:
SHEET: EC-01



DETAIL–A
SILT FENCE DETAIL
–NTS–



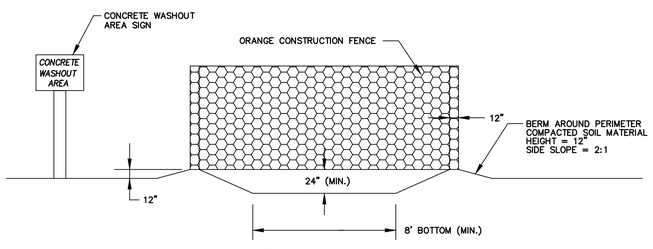
TYPICAL PROTECTION FOR INLET ON SUMP



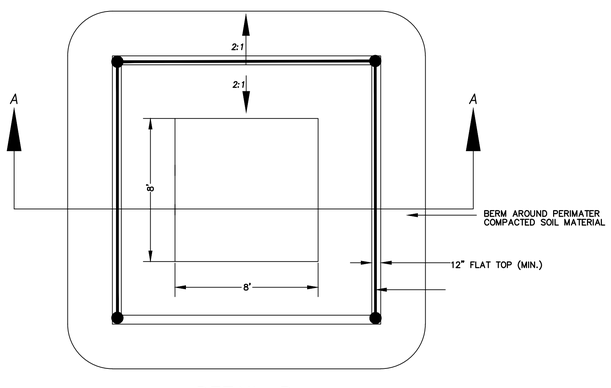
TYPICAL PROTECTION FOR INLET ON GRADE

DETAIL–E

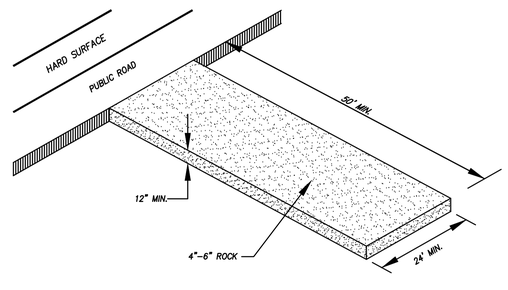
NOTES:
1. Intended for short-term use.
2. Use to inhibit non-storm water flow.
3. Allow for proper maintenance and cleanup.
4. Bags must be removed after adjacent operation is completed
5. Not applicable in areas with high silts and clays without filter fabric.



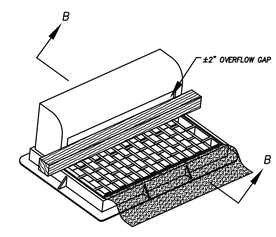
SECTION A–A

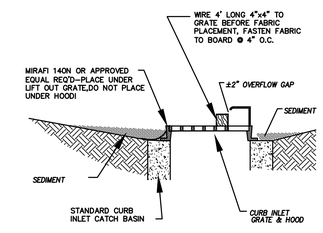


DETAIL–B
CONCRETE WASHOUT PIT
–NTS–



DETAIL–D
VEHICLE TRACKING DETAIL
–NTS–





CROSS SECTION B–B
OPTION B

* CATCH BASIN INLET PROTECTIONS ARE TO REMAIN IN PLACE AND OPERATIONAL UNTIL ALL CONSTRUCTION IS COMPLETED AT THE SITE.

DETAIL–F
CURB INLET PROTECTION
DETAIL FOR EXISTING CATCH BASINS
–NTS–

ANY OF THE ABOVE OPTIONS (C, E, OR F) MAY BE USED

GENERAL NOTES:

1. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING ONSITE EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL FACILITIES.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DRAINAGE AND EROSION CONTROL FACILITIES AS REQUIRED. STREETS SHALL BE KEPT CLEAN OF DEBRIS FROM SITE TRAFFIC.

3. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO UNFORESEEN PROBLEMS OR IF THE PLAN DOES NOT FUNCTION AS INTENDED. A REPRESENTATIVE OF THE CITY OR COUNTY PUBLIC WORKS DEPARTMENT MAY REQUIRE ADDITIONAL CONTROL DEVICES UPON INSPECTION OF PROPOSED FACILITIES.

4. CONTRACTOR SHALL USE VEHICLE TRACKING CONTROL AT ALL LOCATIONS WHERE VEHICLES WILL ENTER OR EXIT THE SITE. CONTROL FACILITIES WILL BE MAINTAINED WHILE CONSTRUCTION IS IN PROGRESS, MOVED WHEN NECESSARY, AND REMOVED WHEN THE SITE IS PAVED.

5. ALL EROSION CONTROL SYSTEMS USING A GEOTECHNICAL FABRIC FOR INLET GRATE PROTECTION MUST BE REGULARLY CLEANED (14 DAY INTERVAL MAX, MORE FREQUENTLY IF NEEDED) TO INSURE THAT SILT DOES NOT FORM IMPERMEABLE BARRIER OVER INLET.

6. ANY SOIL OR GRANULAR STOCKPILED MATERIAL SHALL BE CONTAINED WITHIN A SILT FENCED AREA.

7. THE CONTRACTOR SHALL PROVIDE TEMPORARY ONSITE SANITARY FACILITIES FOR CONSTRUCTION PERSONNEL.

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NO.	REVISIONS	DATE	BY	APP.

K:\3-11-037-00 Saratoga Medical\CAD\Final\Final\EROSION CONTROL DETAILS.dwg 4/21/2015 10:47 AM

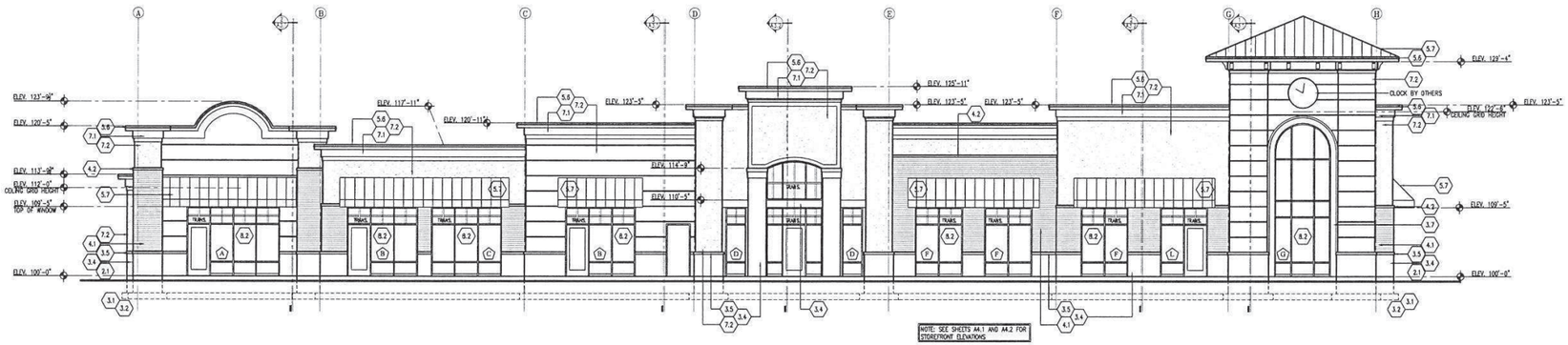
Northern ENGINEERING INC
ENGINEERING–LAND PLANNING
CONSTRUCTION MANAGEMENT

TIMES SQUARE AT SARATOGA
PROJECT LOCATED IN SARATOGA SPRINGS, UTAH
NW 1/4 SECTION 23, T 5S R 1W SLB&M
11140 NORTH REDWOOD ROAD

EROSION CONTROL PLAN DETAILS

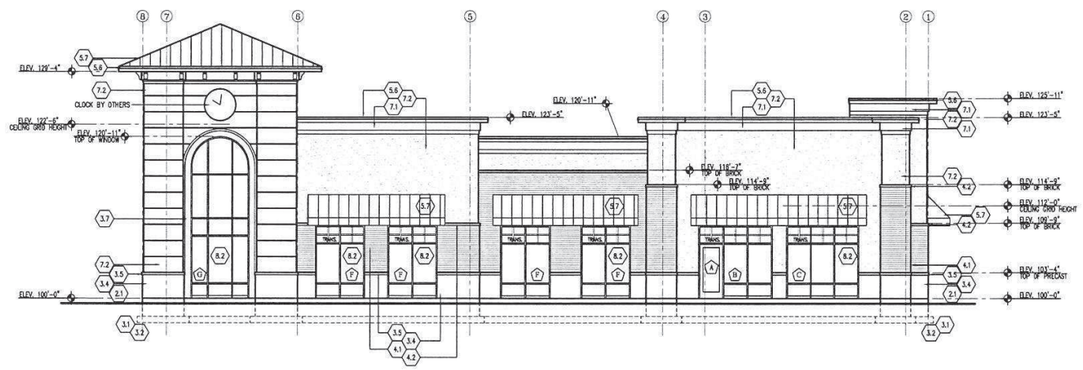
NORTHERN ENGINEERING INC
1040 EAST 800 NORTH
OREM, UTAH 84097
801.802.8992
fax:801.802.8993

DATE: 4/21/15
SCALE: –NTS–
JOB NO.: 3–11–037–00
DESIGNED BY:
DRAWN BY:
SHEET NAME:
SHEET: EC–02



1 A2-1 STREET ELEVATION

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



2 A2-1 RIGHT SIDE ELEVATION

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

SITE CONSTRUCTION

(2.1) FINISH GRADE – SLOPE 1/2 INCH PER FOOT MIN.
(2.2) 4" GRAVEL FILL

CONCRETE

(3.1) CONCRETE FOUNDATION WALL – SEE STRUCTURAL DRAWINGS W/ BASF (HYDROZO ENVIROSEAL DOUBLE 7) OR EQUAL
(3.2) CONCRETE FOOTING – SEE STRUCT. FOOTING AND FND. PLAN
(3.3) 4" CONCRETE SLAB – SEE STRUCT. DWGS.
(3.4) 4" PRECAST PANEL – BRAILSFORD OR EQUAL
(3.5) 4" PRECAST CAP – BRAILSFORD OR EQUAL
(3.6) CONCRETE SIDEWALK
(3.7) 12" PRECAST TRIM

MASONRY

(4.1) BRICK W/ HECKMANN NO.260 22 GA. TIES NAILED TO STUDS at 16" o/c. BOTH WAYS. CRIMP FREE END OF TIE AROUND CONTINUOUS 9 GA. WIRE IN HORIZONTAL JOINTS at 16" O/C
(4.2) BRICK SILL

METALS

(5.4) METAL HANGER – SEE STRUCTURAL DWGS.
(5.6) PREFINISHED ALUM. DRIP
(5.7) STANDING METAL SEAM ROOF
(5.8) PREFINISHED METAL FLASHING, .027 – SEE MANUFACTURER FOR DETAILS, AND INSTALLATION SPECIFICATIONS
(5.9) STEEL ANGLE – SEE STRUCT.

WOOD AND PLASTICS

(6.1) 2x4 STUDS – SEE STRUCT. FOR SPACING
(6.2) 2x6 STUDS – SEE STRUCT. FOR SPACING
(6.3) 2x8 STUDS – SEE STRUCT. FOR SPACING
(6.6) 2x TREATED PLATE – SEE STRUCT. FOR BOLT SIZE AND SPACING
(6.8) DOUBLE-2x TOP PLATE 48" LAP SPLICE MIN.
(6.9) BLOCKING AT +8'-0"

(6.14) NOT USED
(6.15) COX PLYWOOD OR O.S.B. SHEATHING – SEE STRUCT.
(6.16) FACTORY ENGINEERED WOOD TRUSSES SEE STRUCTURAL FOR SPACING BOTTOM BEARING – DEPTH BY TRUSS SUPPLIER – NOT TO EXCEED 60" – LESS IS DESIRED
(6.23) WOOD COLUMN – SEE STRUCT.
(6.27) WOOD BEAM – SEE STRUCTURAL DRAWINGS
(6.28) 2x10'S – SEE STRUCT. FOR SPACING
(6.29) RIM BOARD (BOLTED TO WALL) – SEE STRUCT.
(6.30) 2x4 @ 24" O/C

THERMAL & MOISTURE

(7.1) EIFS TRIM – DRYVIT (OUTSOLATION PLUS) OR EQUAL
(7.2) EIFS SYSTEM – DRYVIT (OUTSOLATION PLUS) OR EQUAL
(7.3) NOT USED
(7.4) AIR BARRIER –TYVEK COMMERCIAL WRAP
(7.6) NOT USED
(7.7) 4 MIL VISQUEEN MOISTURE BARRIER
(7.13) FIBERFIL INSULATION – EQUAL TO OPTIMA – R-19 (6" STUDS) UNFACED BATTS (ABOVE CEILINGS)
(7.14) 2" RIGID INSULATION
(7.15) 4" RIGID INSULATION – POLY EURATHANE (R-VALUE 7.5/INCH MINIMUM)
(7.17) OR FIRESTONE ISO 95+GL 4" MIN.(R-VALUE 7.5/INCH MINIMUM)
(7.20) ULTRA-PLY TPO 60 MIL. MEMBRANE – CLASS B– FIRESTONE OR EQUAL –

DOORS AND WINDOWS

(8.1) NOT USED
(8.2) ALUMINUM ENTRY SYSTEM – KAWNEER 451T OR EQUAL (STOREFRONT AND DOORS)

FINISHES

(9.1) 5/8" TYPE X GYP BOARD – FIRE TAPE ONLY
(9.2) 5/8" TYPE X GYP BOARD 2 LAYERS EACH SIDE – FIRE TAPE ONLY
(9.3) ACOUSTIC TILE ON SUSPENDED SYSTEM – REVEAL EDGE – ARMSTRONG OR EQUAL AT TIME OF TENANT FINISH
(9.4) 5/8" EXTERIOR GYPSUM SHEATHING

THESE DRAWINGS OR ANY PARTS THEREOF, AS INSTRUMENTS OF SERVICE, REMAIN THE PROPERTY OF THE ARCHITECTS AND MAY NOT BE REPRODUCED OR USED ON OTHER WORK WITHOUT THEIR WRITTEN CONSENT

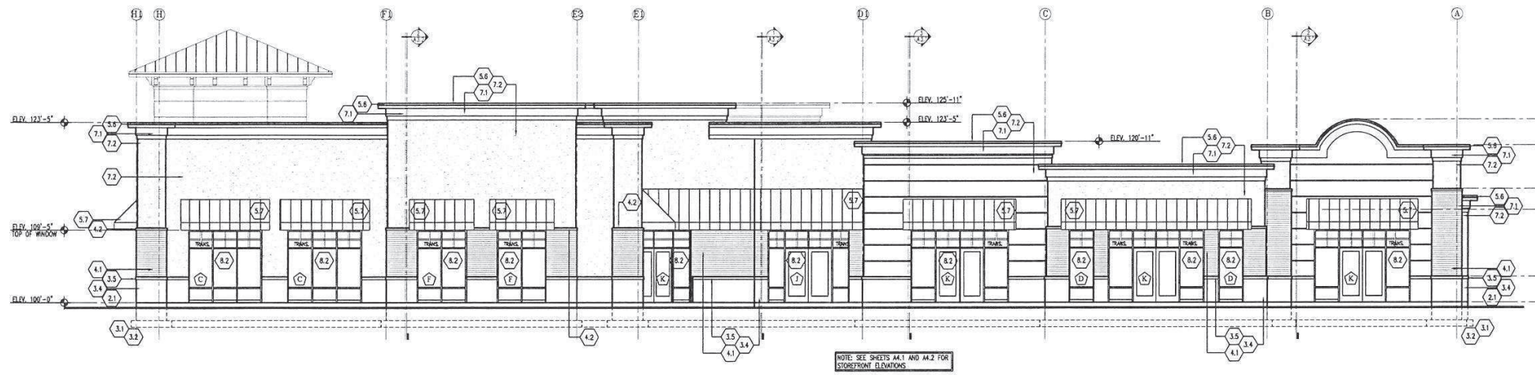
PRELIMINARY SET - NOT FOR CONSTRUCTION

REVISIONS	BY

KEN HARRIS ARCHITECT
3520 NORTH UNIVERSITY AVENUE SUITE #200 PROVO UT 84604 PHONE 801 377-6303

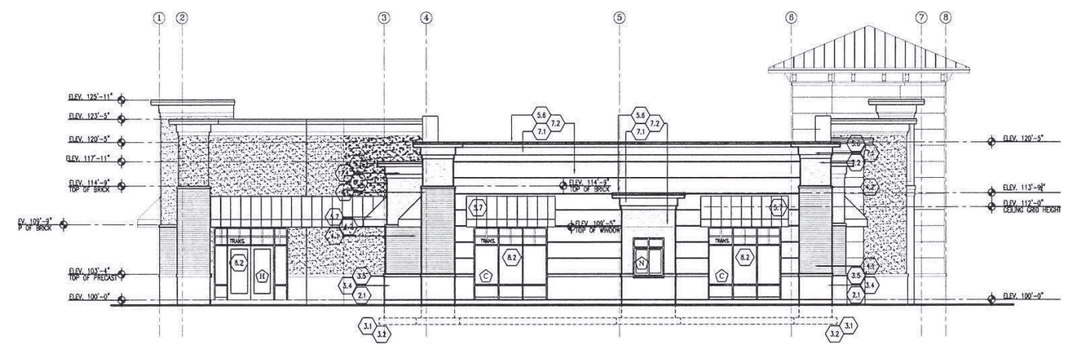
A NEW RETAIL DEVELOPMENT PLAN FOR
TIME SQUARE @ SARATOGA SPRINGS
SARATOGA SPRINGS UTAH
EXTERIOR ELEVATIONS

DRAWN BKH
CHECKED KBH
DATE APRIL 2013
SCALE SEE PLAN
PLOTTED
SHEET A2.1



1 A2.2 FRONT ELEVATION

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



2 A2.2 LEFT SIDE ELEVATION

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

SITE CONSTRUCTION

(2.1) FINISH GRADE – SLOPE 1/2 INCH PER FOOT MIN.

(2.3) 4" GRAVEL FILL

CONCRETE

(3.1) CONCRETE FOUNDATION WALL – SEE STRUCTURAL DRAWINGS W/ BASF (HYDROZO ENVIROSEAL DOUBLE 7) OR EQUAL

(3.2) CONCRETE FOOTING – SEE STRUCT. FOOTING AND FND. PLAN

(3.3) 4" CONCRETE SLAB – SEE STRUCT. DWGS.

(3.4) 4" PRECAST PANEL – BRAILSFORD OR EQUAL

(3.5) 4" PRECAST CAP – BRAILSFORD OR EQUAL

(3.6) CONCRETE SIDEWALK

(3.7) 12" PRECAST TRIM

MASONRY

(4.1) BRICK W/ HECKMANN NO.260 22 GA. TIES NAILED TO STUDS at 16" o/c. BOTH WAYS. CRIMP FREE END OF TIE AROUND CONTINUOUS 9 GA. WIRE IN HORIZONTAL JOINTS at 16" O/C

(4.2) BRICK SILL

METALS

(5.4) METAL HANGER – SEE STRUCTURAL DWGS.

(5.5) PREFINISHED ALUM. DRIP

(5.7) STANDING METAL SEAM ROOF

(5.8) PREFINISHED METAL FLASHING, .027 – SEE MANUFACTURER FOR DETAILS, AND INSTALLATION SPECIFICATIONS

(5.9) STEEL ANGLE – SEE STRUCT.

WOOD AND PLASTICS

(6.1) 2x4 STUDS – SEE STRUCT. FOR SPACING

(6.2) 2x6 STUDS – SEE STRUCT. FOR SPACING

(6.3) 2x8 STUDS – SEE STRUCT. FOR SPACING

(6.6) 2x TREATED PLATE – SEE STRUCT. FOR BOLT SIZE AND SPACING

(6.8) DOUBLE-2x TOP PLATE 48" LAP SPLICE MIN.

(6.13) BLOCKING AT +8'-0"

(6.14) NOT USED

(6.15) CDX PLYWOOD OR O.S.B. SHEATHING – SEE STRUCT.

(6.16) FACTORY ENGINEERED WOOD TRUSSES SEE STRUCTURAL FOR SPACING BOTTOM BEARING – DEPTH BY TRUSS SUPPLIER – NOT TO EXCEED 60" – LESS IS DESIRED

(6.22) WOOD COLUMN – SEE STRUCT.

(6.27) WOOD BEAM – SEE STRUCTURAL DRAWINGS

(6.28) 2x10'S – SEE STRUCT. FOR SPACING

(6.29) RIM BOARD (BOLTED TO WALL) – SEE STRUCT.

(6.30) 2x4 @ 24" O/C

THERMAL & MOISTURE

(7.1) EIFS TRIM – DRYVIT (OUTSOLATION PLUS) OR EQUAL

(7.2) EIFS SYSTEM – DRYVIT (OUTSOLATION PLUS) OR EQUAL

(7.3) NOT USED

(7.4) AIR BARRIER –TYVEK COMMERCIAL WRAP

(7.6) NOT USED

(7.7) 4 MIL MSQUEEN MOISTURE BARRIER

(7.10) FIBERFIL INSULATION – EQUAL TO OPTIMA – R-19 (6" STUDS) UNFACED BATTS (ABOVE CEILINGS)

(7.16) 2" RIGID INSULATION

(7.17) 4" RIGID INSULATION – POLY EURATHANE (R-VALUE 7.5/INCH MINIMUM) OR FIRESTONE ISO 95+GL 4" MIN.(R-VALUE 7.5/INCH MINIMUM)

(7.20) ULTRA-PLY TPO 60 MIL. MEMBRANE – CLASS B– FIRESTONE OR EQUAL –

DOORS AND WINDOWS

(8.1) NOT USED

(8.2) ALUMINUM ENTRY SYSTEM – KAWNEER 451T OR EQUAL (STOREFRONT AND DOORS)

FINISHES

(9.1) 5/8" TYPE X GYP BOARD – FIRE TAPE ONLY

(9.2) 5/8" TYPE X GYP BOARD 2 LAYERS EACH SIDE – FIRE TAPE ONLY

(9.3) ACOUSTIC TILE ON SUSPENDED SYSTEM – REVEAL EDGE – ARMSTRONG OR EQUAL AT TIME OF TENANT FINISH

(9.4) 5/8" EXTERIOR GYPSUM SHEATHING

THESE DRAWINGS OR ANY PARTS THEREOF, AS INSTRUMENTS OF SERVICE, REMAIN THE PROPERTY OF THE ARCHITECTS AND MAY NOT BE REPRODUCED OR USED ON OTHER WORK WITHOUT THEIR WRITTEN CONSENT

PRELIMINARY SET - NOT FOR CONSTRUCTION

REVISIONS	BY

KEN HARRIS ARCHITECT
3500 NORTH UNIVERSITY AVENUE SUITE #200 PROVO UT 84604 PHONE 801 377-6303

A NEW RETAIL DEVELOPMENT PLAN FOR
TIME SQUARE @ SARATOGA SPRINGS
SARATOGA SPRINGS UTAH

EXTERIOR ELEVATIONS

DRAWN	BKH
CHECKED	KBH
DATE	APRIL 2013
SCALE	SEE PLAN
PLOTTED	--------
SHEET	A2.2

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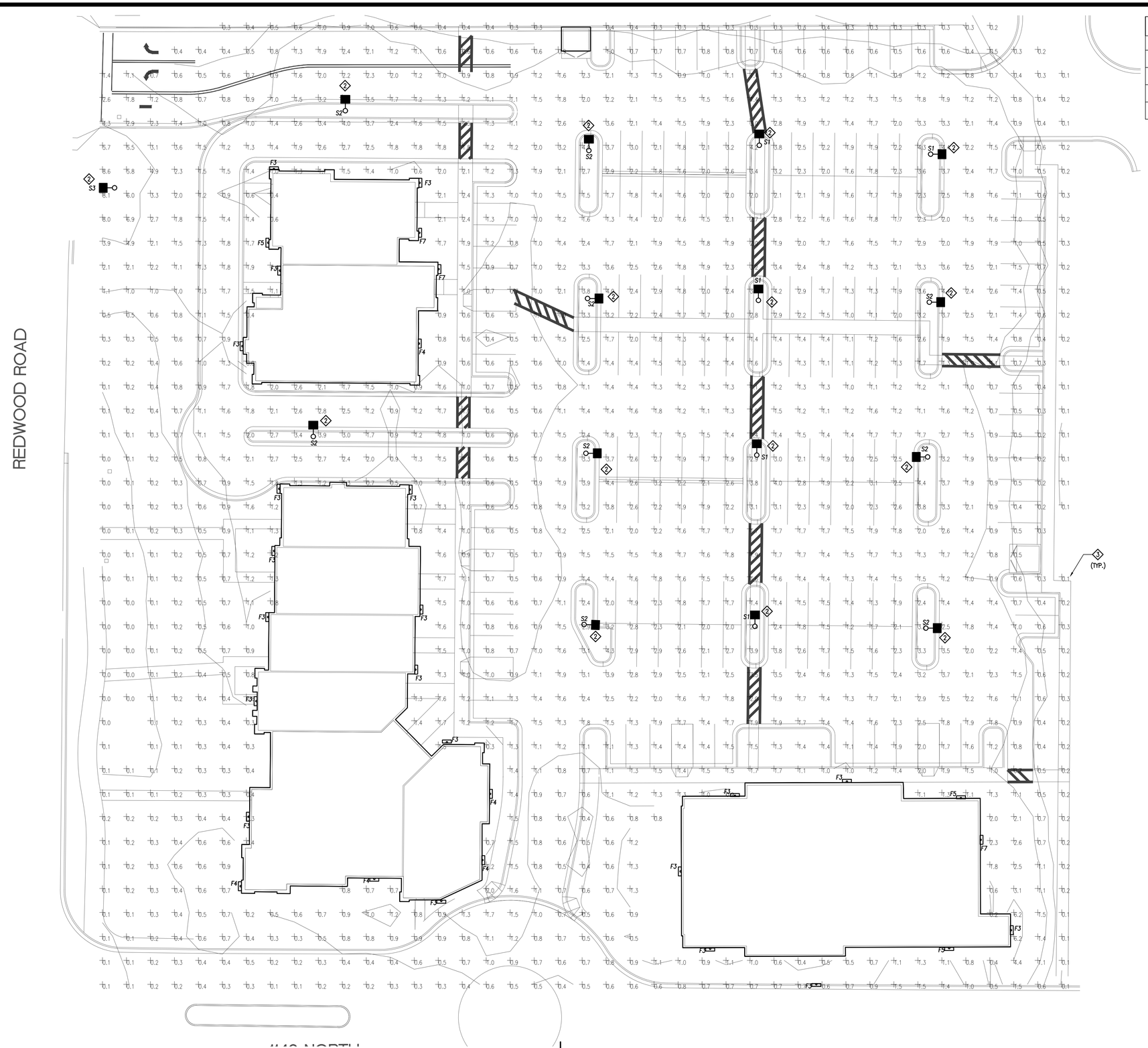


PHOTOMETRIC SITE PLAN

SCALE: 1" = 20'-0"

STATISTICS						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone #12	+	1.4 fc	8.6 fc	0.0 fc	N / A	N / A
Parking	+	1.7 fc	4.6 fc	0.3 fc	15.3:1	(1) 5.7:1
property line	+	0.1 fc	0.2 fc	0.0 fc	N / A	N / A
Stat Zone # 4	+	1.6 fc	4.4 fc	0.0 fc	N / A	N / A

SARATOGA SPRINGS CITY NOTES:

a. POST-APPROVAL ALTERATIONS TO LIGHTING PLANS OR INTENDED SUBSTITUTIONS FOR APPROVED LIGHTING EQUIPMENT SHALL BE SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL.

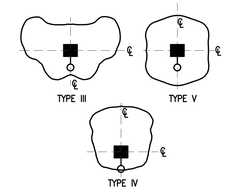
b. THE CITY RESERVES THE RIGHT TO CONDUCT POST-INSTALLATION INSPECTIONS TO VERIFY COMPLIANCE WITH THE CITY'S REQUIREMENTS AND APPROVED LIGHTING PLAN COMMITMENTS, AND IF DEEMED APPROPRIATE BY THE CITY, TO REQUIRE REMEDIAL ACTION AT NO EXPENSE TO THE CITY.

c. ALL EXTERIOR LIGHTING SHALL MEET IESNA FULL-CUTOFF CRITERIA UNLESS OTHERWISE APPROVED BY THE CITY.

ELECTRICAL KEYED NOTES:

(1) CITY REQUIRED 4:1 RATIO COULD NOT BE MET DUE TO PROXIMITY OF PAVED SURFACES TO PROPERTY LINE (REQUIRED TO BE 0.1 FC). AVERAGE COULD NOT REASONABLY BE LOWERED AND MINIMUM COULD NOT BE RAISED WITHOUT INCREASING LIGHT AT PROPERTY LINE.

(2) ORIENTATION OF FIXTURE INDICATES ORIENTATION OF OPTICS NOT ORIENTATION OF POLE FIXTURE HEAD. FIXTURE HEAD ORIENTATION SHALL BE DETERMINED BY OWNER OR CITY. CONTRACTOR SHALL FIELD ROTATE OPTICS AS INDICATED.



(3) ILLUMINATION LEVEL INDICATED IN FOOT-CANDLES.

ELECTRICAL GENERAL NOTES:

1. UNLESS OTHERWISE NOTED, BUILDING MOUNTED FIXTURES SHALL BE MOUNTED AT 16 FEET ABOVE FINISHED GRADE. VERIFY LOCATION WITH FINAL ARCHITECTURAL ELEVATIONS. FIELD VERIFY WITH OWNER PRIOR TO ROUGH-IN.

REVISIONS	BY

KEN HARRIS ARCHITECT
3520 NORTH UNIVERSITY AVENUE SUITE #200 PROVO UT 84604 PHONE 801 377-6303

A NEW RETAIL DEVELOPMENT PLAN FOR

TIME SQUARE @ SARATOGA SPRINGS

SARATOGA SPRINGS UTAH

PHOTOMETRIC SITE PLAN

ROYAL ENGINEERING
ELECTRICAL
2335 SOUTH STATE SUITE 100
PHONE: 801.375.2228
MECHANICAL
PROVO, UTAH 84606
FAX: 801.375.2676

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DRAWN	DCE
CHECKED	KLB
DATE	NOVEMBER 2013
SCALE	SEE PLAN
PLOTTED	--------
SHEET	E0.1

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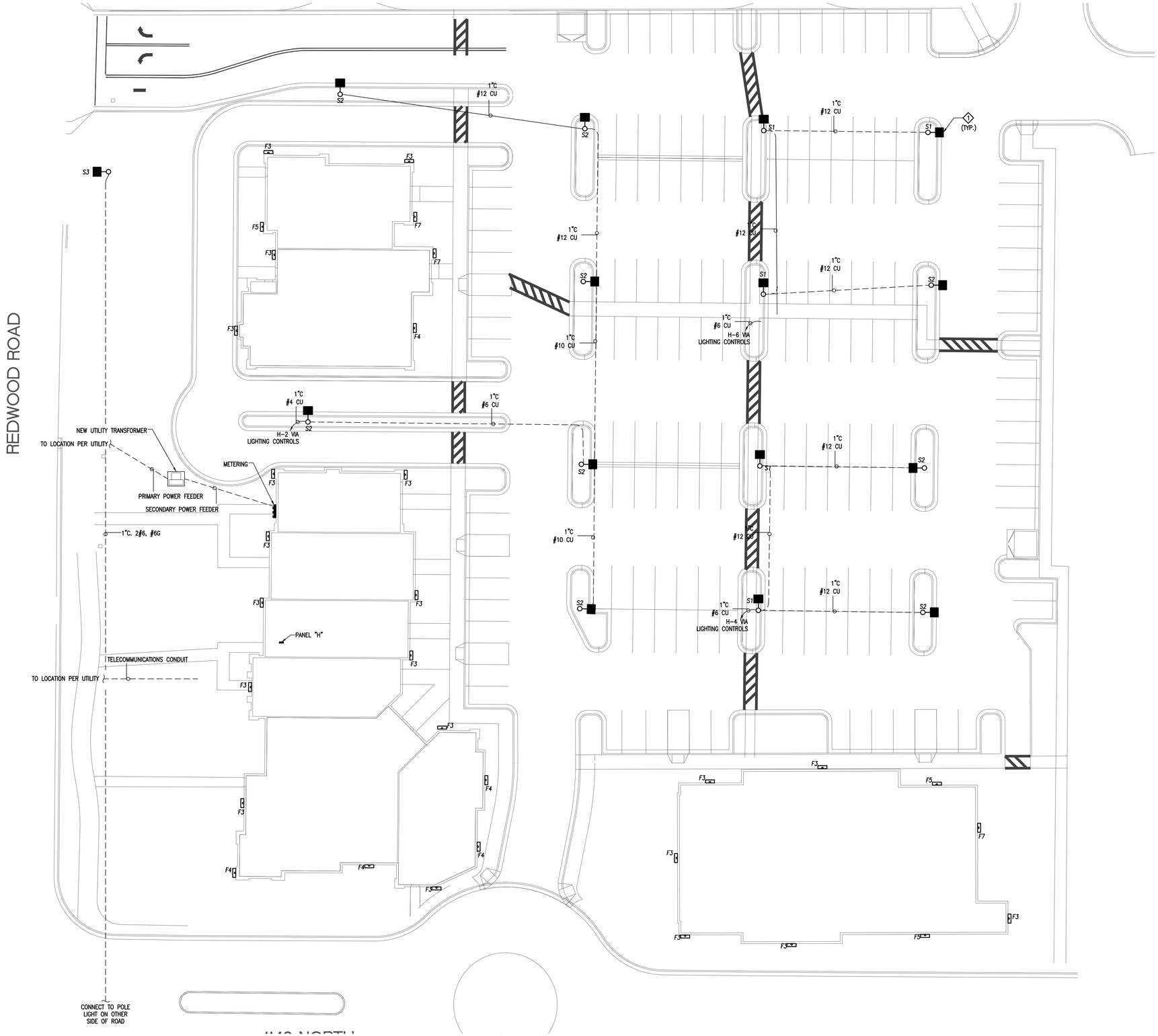
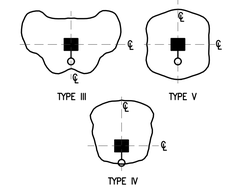


ELECTRICAL KEYED NOTES:

1. ORIENTATION OF FIXTURE INDICATES ORIENTATION OF OPTICS NOT ORIENTATION OF POLE FIXTURE HEAD. FIXTURE HEAD ORIENTATION SHALL BE DETERMINED BY OWNER OR CITY. CONTRACTOR SHALL FIELD ROTATE OPTICS AS INDICATED.



REVISIONS	BY

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A NEW RETAIL DEVELOPMENT PLAN FOR

TIME SQUARE @ SARATOGA SPRINGS

SARATOGA SPRINGS UTAH

ELECTRICAL SITE PLAN

ELECTRICAL SITE PLAN

SCALE: 1" = 20'-0"

ROYAL ENGINEERING
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CHECKED	KLB
DATE	NOVEMBER 2013
SCALE	SEE PLAN
PLOTTED	--------
SHEET	E0.2

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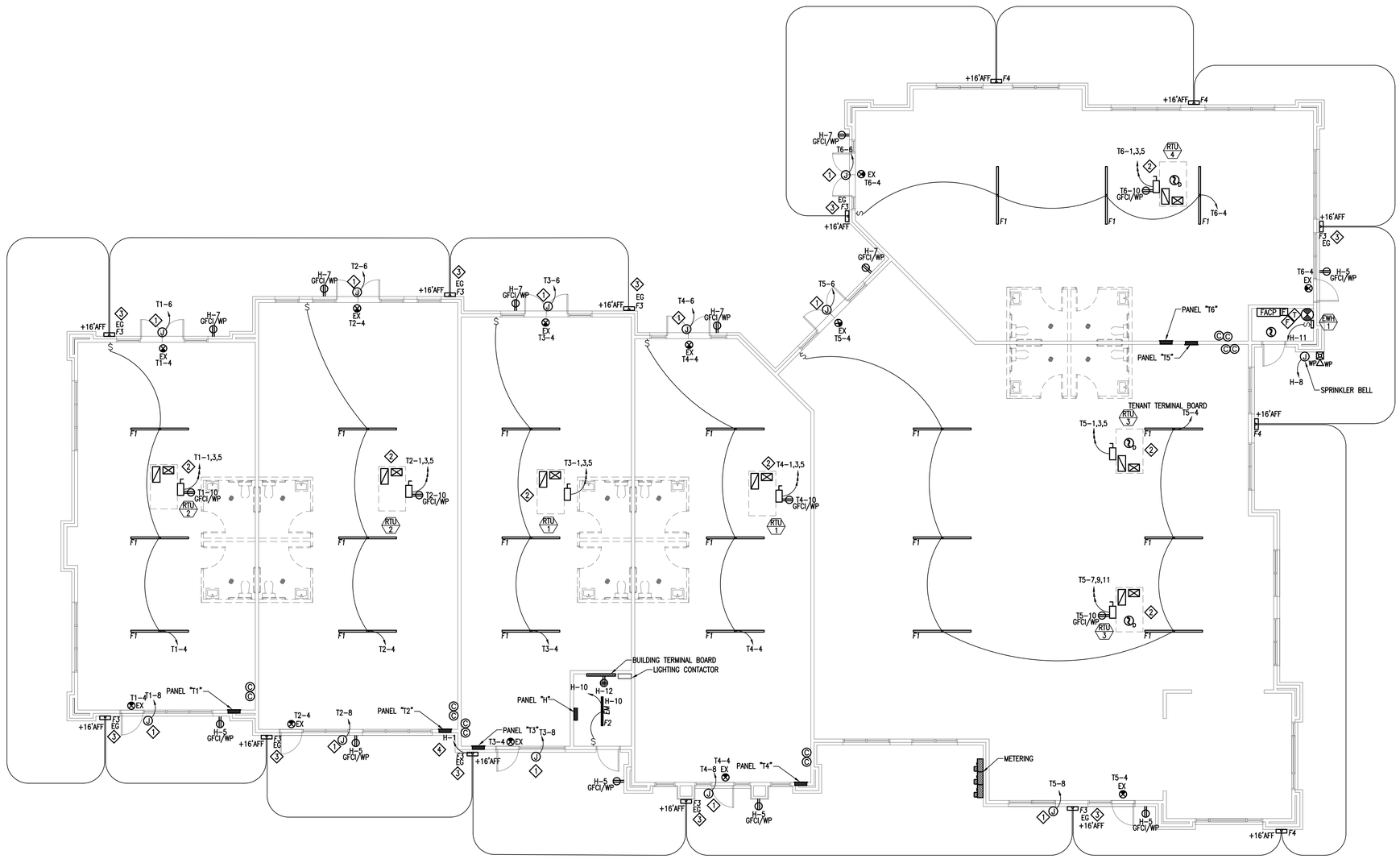
ELECTRICAL KEYED NOTES:

1. JUNCTION BOX FOR BUILDING SIGNAGE. MOUNT 15' AFF.
2. PROPOSED LOCATION FOR ROOF TOP UNIT.
3. PROVIDE UNSWITCHED LEG FOR EMERGENCY BACKUP.
4. CONNECT VIA LIGHTING CONTROL.

REVISIONS	BY



BUILDING GROUP A ELECTRICAL PLAN

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

KEN HARRIS ARCHITECT
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A NEW RETAIL DEVELOPMENT PLAN FOR
TIME SQUARE @ SARATOGA SPRINGS
SARATOGA SPRINGS UTAH
ELECTRICAL FLOOR PLAN

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DRAWN	DCE
CHECKED	KLB
DATE	NOVEMBER 2013
SCALE	SEE PLAN
PLOTTED	--------
SHEET	E1.1

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PANEL SCHEDULE "T"

VOLTAGE: 208 Y/ 120 VOLTS | BUS RATING (AMPS): 225 | REMARKS: TYPICAL TENANT PANEL SEE PLANS FOR VARIATIONS: T1 -T4; (1)RTU T5; (2)RTU T6; 1 RTU

MOUNTING: RECESSED | PHASE: 3 | MAIN LUGS ONLY

ENCLOSURE: NEMA 1 | WIRE: 4 | MINIMUM EQUIPMENT RATING: 22,000 AMPS (RMS-SYM)

CIRCUIT BREAKER					FEEDER			CKT. LOAD		LOAD/PHASE (VA)			CKT. LOAD		FEEDER				CIRCUIT BREAKER			
No.	AMPS	POLE	MOD.	CIRCUIT NAME	C	WIRE	GRD	DEMAND FACTOR	WATTS	ØA	ØB	ØC	WATTS	DEMAND FACTOR	GRD	WIRE	C	CIRCUIT NAME	MOD.	POLE	AMPS	No.
1	50	3	-	RTU	¾"	#8	#10	1.00	4,744	4,744				1.00				SPACE	-			2
3	-	-	-	-	-	#8	-	1.00	4,744		5,536		792	1.25	#12	#12	¾"	SECURITY LIGHTING	-	1	20	4
5	-	-	-	-	-	#8	-	1.00	4,744			5,244	500	1.25	#12	#12	¾"	TENANT SIGNAGE	-	1	20	6
7	50	3	-	RTU	¾"	#8	#10	1.00	4,744	5,244			500	1.25	#12	#12	¾"	TENANT SIGNAGE	-	1	20	8
9	-	-	-	-	-	#8	-	1.00	4,744		4,924		180	1.00	#12	#12	¾"	ROOF TOP RECP.	-	1	20	10
11	-	-	-	-	-	#8	-	1.00	4,744			4,744		1.00				SPACE	-			12
13			-	SPACE				1.00		0				1.00				SPACE	-			14
15			-	SPACE				1.00			0			1.00				SPACE	-			16
17			-	SPACE				1.00				0		1.00				SPACE	-			18
19			-	SPACE				1.00		0				1.00				SPACE	-			20
21			-	SPACE				1.00			0			1.00				SPACE	-			22
23			-	SPACE				1.00				0		1.00				SPACE	-			24
25			-	SPACE				1.00		0				1.00				SPACE	-			26
27			-	SPACE				1.00			0			1.00				SPACE	-			28
29			-	SPACE				1.00				0		1.00				SPACE	-			30
31			-	SPACE				1.00		0				1.00				SPACE	-			32
33			-	SPACE				1.00			0			1.00				SPACE	-			34
35			-	SPACE				1.00				0		1.00				SPACE	-			36
37			-	SPACE				1.00		0				1.00				SPACE	-			38
39			-	SPACE				1.00			0			1.00				SPACE	-			40
41			-	SPACE				1.00				0		1.00				SPACE	-			42

ØA	ØB	ØC	TOTALS	
9,987	10,459	9,987	30,433	CONNECTED LOAD (VA)
			84	CONNECTED LOAD (A)
125	198	125	448	DEMAND FACTOR ADJUSTMENTS (VA)
10,112	10,657	10,112	30,881	TOTAL LOAD (VA)
84	89	84	86	TOTAL LOAD (A)
33%	35%	33%		PHASE BALANCE

NOTES :

1. ALL INSULATION ON CONDUCTORS TO BE THHN UNLESS NOTED OTHERWISE. INSULATION ON ALL UNDERGROUND EXTERIOR CONDUCTORS SHALL BE THHW.
2. LOAD DEMANDS CALCULATED AS PER SECTIONS 210 & 220 OF THE NATIONAL ELECTRICAL CODE.
3. PANEL COVER SHALL BE FIELD MARKED FOR FLASH PROTECTION WITH A PERMANENT LABEL AS REQUIRED BY THE NATIONAL ELECTRICAL CODE SECTION 110. LABEL SHALL READ: "DANGER: POTENTIAL ARC FLASH HAZARD"
4. ABBREVIATIONS: CO-CONVENIENCE OUTLET, RR-RESTROOM, (N)ORTH, (S)OUTH, (E)AST, (W)EST.

PANEL SCHEDULE "H"

VOLTAGE: 208 Y/ 120 VOLTS | BUS RATING (AMPS): 100 | REMARKS:

MOUNTING: SURFACE | PHASE: 3 | MAIN LUGS ONLY

ENCLOSURE: NEMA 1 | WIRE: 4 | MINIMUM EQUIPMENT RATING: 22,000 AMPS (RMS-SYM)

CIRCUIT BREAKER					FEEDER			CKT. LOAD		LOAD/PHASE (VA)			CKT. LOAD		FEEDER				CIRCUIT BREAKER			
No.	AMPS	POLE	MOD.	CIRCUIT NAME	C	WIRE	GRD	DEMAND FACTOR	WATTS	ØA	ØB	ØC	WATTS	DEMAND FACTOR	GRD	WIRE	C	CIRCUIT NAME	MOD.	POLE	AMPS	No.
1	20	1	-	EXTERIOR LIGHTING	¾"	#12	#12	1.25	800	1,850			1,050	1.25	#12	#12	¾"	POLE LIGHTS	-	1	20	2
3	20	1	RED	FACP	¾"	#12	#12	1.00	500		1,760		1,260	1.25	#12	#12	¾"	POLE LIGHTS	-	1	20	4
5	20	1	-	EXTERIOR RECP.	¾"	#12	#12	1.00	1,080			2,340	1,260	1.25	#12	#12	¾"	POLE LIGHTS	-	1	20	6
7	20	1	-	EXTERIOR RECP.	¾"	#12	#12	1.00	1,080	1,440			360	1.00	#12	#12	¾"	SPRINKLER BELL	RED	1	20	8
9	20	1	-	EWH-1	¾"	#12	#12	1.00	1,500		1,566		66	1.25	#12	#12	¾"	ELEC ROOM LIGHT	-	1	20	10
11			-	SPACE				1.00				500	500	1.00	#12	#12	¾"	TERMINAL BOARD	-	1	20	12
13			-	SPACE				1.00		0				1.00				SPACE	-			14
15			-	SPACE				1.00			0			1.00				SPACE	-			16
17			-	SPACE				1.00				0		1.00				SPACE	-			18
19			-	SPACE				1.00		0				1.00				SPACE	-			20
21			-	SPACE				1.00			0			1.00				SPACE	-			22
23			-	SPACE				1.00				0		1.00				SPACE	-			24

ØA	ØB	ØC	TOTALS	
3,290	3,326	2,840	9,456	CONNECTED LOAD (VA)
			26	CONNECTED LOAD (A)
463	332	315	1,109	DEMAND FACTOR ADJUSTMENTS (VA)
3,753	3,658	3,155	10,565	TOTAL LOAD (VA)
31	30	26	29	TOTAL LOAD (A)
36%	35%	30%		PHASE BALANCE

NOTES :

1. ALL INSULATION ON CONDUCTORS TO BE THHN UNLESS NOTED OTHERWISE. INSULATION ON ALL UNDERGROUND EXTERIOR CONDUCTORS SHALL BE THHW.
2. LOAD DEMANDS CALCULATED AS PER SECTIONS 210 & 220 OF THE NATIONAL ELECTRICAL CODE.
3. PANEL COVER SHALL BE FIELD MARKED FOR FLASH PROTECTION WITH A PERMANENT LABEL AS REQUIRED BY THE NATIONAL ELECTRICAL CODE SECTION 110. LABEL SHALL READ: "DANGER: POTENTIAL ARC FLASH HAZARD"
4. ABBREVIATIONS: CO-CONVENIENCE OUTLET, RR-RESTROOM, (N)ORTH, (S)OUTH, (E)AST, (W)EST.

EQUIPMENT SCHEDULE

SYMBOL	DESCRIPTION	SERVICE		DISCONNECT		STARTER	LOAD			REMARKS
		VOLTS	PHASE	SIZE	FUSE		HP/TON	VA	AMPS	
RTU 1	ROOF TOP UNIT	208 V	3Ø	60A NEMA 3R	-	INTEGRAL	4 TON	13,510	37.5 A	
RTU 2	ROOF TOP UNIT	208 V	3Ø	60A NEMA 3R	-	INTEGRAL	5 TON	14,231	39.5 A	
RTU 3	ROOF TOP UNIT	208 V	3Ø	60A NEMA 3R	-	INTEGRAL	6 TON	18,013	50.0 A	
RTU 4	ROOF TOP UNIT	208 V	3Ø	100A NEMA 3R	-	INTEGRAL	7½ TON	20,535	57.0 A	
EWH 1	ELECTRIC WALL HEATER	120 V	1Ø	T-STAT	-	-	-	1,500	12.5 A	

NOTES:

1. VERIFY ALL EQUIPMENT LOCATIONS AND CONNECTION REQUIREMENTS (i.e. VOLTAGE, PHASE, FLA, ETC.) WITH MECHANICAL DRAWINGS/SUBMITTALS BEFORE BEGINNING ROUGH IN.
2. ALL FUSES SHALL BE DUAL ELEMENT TIME DELAY. FINAL BREAKER/FUSE & DISCONNECT SIZE SHALL BE DETERMINED BY MANUFACTURER'S RECOMMENDATION FOR ACTUAL EQUIPMENT INSTALLED.
3. MAXIMUM VALUES INDICATED.
4. DISCONNECTING MEANS NOT REQUIRED FOR EQUIPMENT WITHIN SIGHT (AS DEFINED IN NEC) OF BRANCH PANEL SERVING EQUIPMENT. SEE NEC 422.31 (B).
5. DISCONNECTING MEANS NOT REQUIRED FOR APPLIANCES NOT OVER 300 VA. SEE NEC 422.31 (A).

LIGHT FIXTURE SCHEDULE

FIXTURE NUMBER	FIXTURE MANUFACTURER	FIXTURE CATALOG #	LAMPS		FIXTURE			DESCRIPTION	REMARKS
			TYPE	QTY.	VOLTS	WATTS	MOUNTING		
F1	LITHONIA METALUX DAYBRITE LIGHTOLIER LSI COLUMBIA	TC 2 32 1/4GEB10IS 8TSS-232-UNV-EB81 TT232-1/2EB SW8T232HPF-UNV-H4 S-232-2-SSO10-UE CS8-232-4EU	F32T8/SP35 ECO	4	120	132	SURFACE/CHAIN	96" DOUBLE LAMPSTRIP (TANDEM)	
F2	LITHONIA METALUX DAYBRITE LIGHTOLIER LSI COLUMBIA	C 2 32 GEB10IS SS-232-UNV-EB81 T232-1/2EB SW4S232HPF-UNV-HI S-232-SSO10-UE CS4-232-EU	F32T8/SP35 ECO	2	120	66	SURFACE/CHAIN	48" DOUBLE LAMPSTRIP	
F3	LSI OR ENGINEER AND CITY APPROVED EQUAL	XGBWM3 WT LED 48 450 NW UE BB	LED	-	120	72	SURFACE WALL	LED SCONCE 5000K 5000 LUMENS	FIXTURES WITH EMERGENCY BATTERY PACK INDICATED WITH "EG"
F4	LSI OR ENGINEER AND CITY APPROVED EQUAL	XGBWM3 WT LED 48 450 NW UE	LED	-	120	72	SURFACE WALL	LED SCONCE 5000K 5000 LUMENS	ORDER WITH OUT BATTERY PACK
F5	LSI OR ENGINEER AND CITY APPROVED EQUAL	XGBWM3 FT LED 48 450 NW UE	LED	-	120	72	SURFACE WALL	LED SCONCE 5000K 5000 LUMENS	ORDER WITH OUT BATTERY PACK
EG	LITHONIA MCPHILBEN EXITRONIX DUAL-LITE ISOLITE LIGHTOLIER	AFN DB EXT PDNBZ TR-WB-BR-CL PGZ-HTR EYE6 LVL?HR	6W XENON INCLUDED	2	120	12	SURFACE WALL	EMERGENCY EGRESS LIGHT	EMERGENCY EGRESS FINISH SELECTED BY ARCHITECT
EM	BODINE LITHONIA IOTA EXITRONIX DUAL-LITE LIGHTOLIER	B50 PS1100 I-48 XEB-14 UFO-6W FBP50	----	----	120	----	----	EMERGENCY BALLAST ((2)-4 FOOT T-8 LAMP)	EMERGENCY BALLAST 4 FOOT T8 LAMP, 1100 LUMENS MIN. VERIFY COMPATIBILITY BEFORE ORDERING
EX	LITHONIA MCPHILBEN LIGHTOLIER DUAL-LITE EXITRONIX ISOLITE	LQM S W 3 G EL N CXXL-3-GW LDS-N-U-G-W CV3GEW GVEX-U-BP-WB-WH RL-EM-G-WW	INCLUDED	2	120	1.5	UNIVERSAL	UNIVERSAL MOUNT WITH EXTRA FACE PLATE FOR FIELD CONVERSION 1-2 FACE	NICKEL/CADMIUM BATTERY SINGLE FACE EXIT

NOTE- ALL LUMINAIRES THAT UTILIZE DOUBLE ENDED FLUORESCENT LAMPS AND CONTAIN BALLASTS THAT CAN BE SERVICED IN PLACE SHALL HAVE A DISCONNECTING MEANS AS REQUIRED BY 2011 NEC 410.130 (G)(1)

SITE LIGHTING FIXTURE SCHEDULE

FIXT #	FIXTURE						LAMPS		POLE			REMARKS
	MANUFACTURER	CATALOG #	VOLTS	#/POLE	WATTS	MOUNTING	TYPE	QTY/FIXT.	MANUFACTURER	HEIGHT	CATALOG #	
S1	LSI LITHONIA* COOPER* US ARCHITECTURAL* VISIONAIRE*	PTHW-5-150PSMH-F-MT-CBA-RPPC AS1 150M SR5S SCWA TLM 150 MP MT 5S FG CBA AERM-V-150MH-1-SCBA ARI1-T5-150 PS 120 AM CBA	120	1	189	POLE	150W MH	1	LSI LITHONIA* US ARCH* SPAULDING LTG*	20'-0"	5RPB5 A125 20 S CBA RSA 20 4C RNTA-205-188 RSA-20-40-C-**-SCBA	*CITY APPROVAL REQUIRED FOR MANUFACTURERS OTHER THAN LSI.
S2	LSI LITHONIA* COOPER* US ARCHITECTURAL* VISIONAIRE*	PTHW-3-150PSMH-F-MT-CBA-RPPC AS1 150M SR3 SCWA TLM 150 MP MT 5S FG CBA AERM-III-150MH-1-SCBA ARI1-T5-150 PS 120 AM CBA	120	1	189	POLE	150W MH	1	LSI LITHONIA* US ARCH* SPAULDING LTG*	20'-0"	5RPB5 A125 20 S CBA RSA 20 4C RNTA-205-188 RSA-20-40-C-**-SCBA	*CITY APPROVAL REQUIRED FOR MANUFACTURERS OTHER THAN LSI.
S3	HADCO	V2703 A B5 N G 150W MH	240	1	189	POLE	150W MH	1	MOUNTAIN STATES LIGHTING	28'0"	28TFS-4.5/8-TT/3HX3/SATRUS S-22"MAD(NAME)-BK	SEE SARATOGA SPRINGS LP3 DETAILS

LOAD CALCULATIONS (No Deration)

GROSS AREA:	12,500	SQ. FT
BUILDING VOLTAGE:	208	VOLTS
PHASE	3	PHASE
OCCUPANCY TYPE:	BUSINESS	
GENERAL LOADS:		
LIGHTING LOAD: (@3.5 WATTS/SQ. FT)	43,750	VA
125% DEMAND	54,688	VA
RECEPTACLE LOAD: (@1WATT/ SQ. FT)	12,500	VA
HVAC LOADS:		
COOLING/HEATING	113,543	VA
RESISTANCE HEATING	-	VA
WATER HEATING	-	VA
PUMPS	-	VA
EXHAUST FANS	-	VA
TOTAL HVAC:	113,543	VA
APPLIANCE AND EQUIPMENT LOADS:		
REFRIGATION	-	VA
KITCHEN EQUIPMENT (@3 WATTS/SQ. FT)	37,500	VA
MOTORS	-	VA
WELDERS	-	VA
LAUNDRY	-	VA
AIR COMPRESSOR	-	VA
MISC. EQUIPMENT	15,591	VA
TOTAL EQUIPMENT	53,091	VA
NET COMPUTED LOAD	233,821	VA
NET COMPUTED AMPS:	649	AMPS

REVISIONS	BY

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ELECTRICAL SCHEDULES

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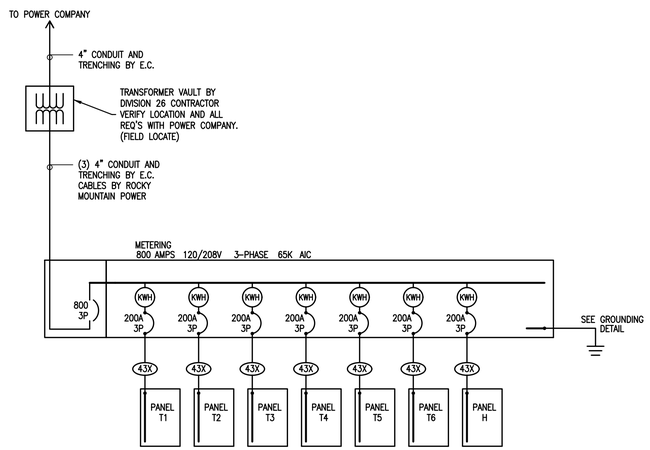
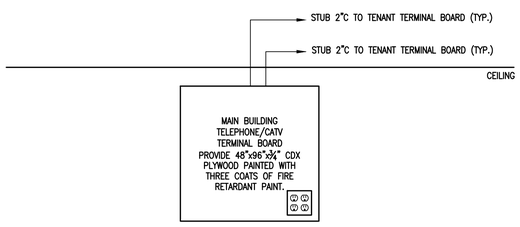


POWER ONE-LINE DIAGRAM

SCALE: NONE



COMMUNICATIONS RISER DIAGRAM

SCALE: NONE

COPPER FEEDER SCHEDULE

TYPE	CONDUIT SIZE PVC	CONDUIT SIZE EMT	CONDUCTORS QUAN.	CONDUCTORS SIZE	75°C AMP RATING
212	3/4"	3/4"	2	#12	25
312	3/4"	3/4"	3	#12	
412	3/4"	3/4"	4	#12	
20	3/4"	3/4"	2	#10	35
30	3/4"	3/4"	3	#10	
40	3/4"	3/4"	4	#10	
28	3/4"	3/4"	2	#8	50
38	3/4"	3/4"	3	#8	
48	3/4"	3/4"	4	#8	
26	3/4"	3/4"	2	#6	65
36	3/4"	3/4"	3	#6	
46	1"	1"	4	#6	
24	3/4"	3/4"	2	#4	85
34	1"	1"	3	#4	
44	1-1/4"	1-1/4"	4	#4	
23	1"	1"	2	#3	100
33	1"	1"	3	#3	
43	1-1/4"	1-1/4"	4	#3	
22	1"	1"	2	#2	115
32	1-1/4"	1-1/4"	3	#2	
42	1-1/4"	1-1/4"	4	#2	

TYPE	CONDUIT SIZE PVC	CONDUIT SIZE EMT	CONDUCTORS QUAN.	CONDUCTORS SIZE	75°C AMP RATING
21	1-1/4"	1-1/4"	2	#1	130
31	1-1/4"	1-1/4"	3	#1	
41	1-1/2"	1-1/2"	4	#1	
21X	1-1/4"	1-1/4"	2	1/0	150
31X	1-1/2"	1-1/2"	3	1/0	
41X	1-1/2"	1-1/2"	4	1/0	
22X	1-1/4"	1-1/4"	2	2/0	175
32X	1-1/2"	1-1/2"	3	2/0	
42X	2"	2"	4	2/0	
23X	1-1/2"	1-1/4"	2	3/0	200
33X	2"	2"	3	3/0	
43X	2"	2"	4	3/0	
24X	1-1/2"	1-1/2"	2	4/0	230
34X	2"	2"	3	4/0	
44X	2-1/2"	2-1/2"	4	4/0	
225	2"	2"	2	250 KCMIL	255
325	2"	2"	3	250 KCMIL	
425	3"	2-1/2"	4	250 KCMIL	
230	2"	2"	2	300 KCMIL	285
330	2-1/2"	2-1/2"	3	300 KCMIL	
430	3"	2-1/2"	4	300 KCMIL	

TYPE	CONDUIT SIZE PVC	CONDUIT SIZE EMT	CONDUCTORS QUAN.	CONDUCTORS SIZE	75°C AMP RATING
235	2"	2"	2	350 KCMIL	310
335	2-1/2"	2-1/2"	3	350 KCMIL	
435	3"	2-1/2"	4	350 KCMIL	
240	2"	2"	2	400 KCMIL	335
340	2-1/2"	2-1/2"	3	400 KCMIL	
440	3"	3"	4	400 KCMIL	
250	2-1/2"	2-1/2"	2	500 KCMIL	380
350	3"	2-1/2"	3	500 KCMIL	
450	4"	3-1/2"	4	500 KCMIL	
260	2-1/2"	2-1/2"	2	600 KCMIL	420
360	3-1/2"	3-1/2"	3	600 KCMIL	
460	4"	4"	4	600 KCMIL	

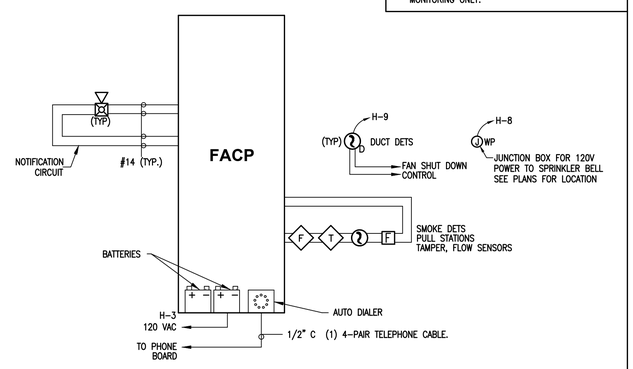
EQUIPMENT GROUNDING CONDUCTORS SCHEDULE

OVERCURRENT DEVICE	COPPER
15	14
20	12
30	10
40	10
60	10
100	8
200	6
300	4
400	3
500	2
600	1
800	1/0

NOTE:
1. SEE EQUIPMENT GROUND CONDUCTOR SCHEDULES OR SERVICE GROUNDING DETIAL FOR GROUND CONDUCTORS RATING.
2. ALL INSULATION SHALL BE THHN UNLESS NOTED OTHERWISE.
3. PVC CONDUIT SIZE IS BASED ON SCHEDULE 40 PVC. PVC IS APPROVED FOR UNDERGROUND FEEDERS ONLY.

GENERAL NOTE:

1. FIRE ALARM SYSTEM IS FOR FIRE SPRINKLER MONITORING ONLY.



NOTE: E.C. RESPONSIBLE FOR COMPLETE INSTALLATION OF FIRE ALARM SYSTEM COMPONENTS.

SPRINKLER MONITOR FIRE ALARM RISER DIAGRAM

SCALE: NONE

ELECTRICAL SYMBOLS

NOTE: ALL SYMBOLS MAY NOT BE USED — DOTTED SYMBOLS INDICATE EXISTING FIXTURE, EQUIPMENT, ETC.

SYMBOL	EXPLANATION
	BRANCH CIRCUIT CONCEALED IN CEILING OR WALL
	BRANCH CIRCUIT CONCEALED IN GROUND OR FLOOR
A-1,3	BRANCH CIRCUIT HOMERUNS TO PANEL
	LIGHTING AND POWER PANELBOARD
CH	MECHANICAL EQUIPMENT SYMBOL
1	KEYED NOTE REFERENCE
J	JUNCTION BOX
	DUPLEX RECEPTACLE OUTLET
WP, A-3, REF	MODIFIER; PANEL SPACE ASSIGNMENT; EQUIPMENT DESIGNATION
WP	WEATHERPROOF COVER & LISTED WEATHER RESISTANT DEVICE
GFCI	PROTECTED BY FAULT CIRCUIT INTERRUPTER
+44	MOUNTING HEIGHT ABOVE FLOOR OR GRADE GIVEN IN INCHES.
REF	REFRIGERATOR
DW	DISHWASHER
DISP	DISPOSAL
WASH	WASHING MACHINE
EWC	ELECTRIC WATER COOLER
	QUAD RECEPTACLE OUTLET
	SPLIT WIRED DUPLEX RECEPTACLE OUTLET
	220V RECEPTACLE OUTLET
	ISOLATED GROUND RECEPTACLE
	RECEPTACLE FLOOR MOUNTED
	RECEPTACLE CEILING MOUNTED
	SPECIAL RECEPTACLE
	DISCONNECT SWITCH
	MOTOR STARTER
	FLUORESCENT FIXTURE (TYPICAL)
EM	EMERGENCY LIGHTING UNIT
	SURFACE OR PENDANT MOUNTED FIXTURE
	RECESSED FIXTURE
	WALL MOUNTED FIXTURE
	WALL PACK
	FLUORESCENT STRIP
	TRACK LIGHTING
	EMERGENCY LIGHTING UNIT
F1	FIXTURE TYPE SYMBOL
135	ROOM NUMBER
©	CONDUIT STUB
	TAMPER AND FLOW
FACP	FIRE ALARM CONTROL PANEL

SYMBOL	EXPLANATION
$	SINGLE POLE SWITCH (SUBSCRIPT AS INDICATED BELOW)
2	TWO POLE SWITCH
3	3-WAY SWITCH
4	4-WAY SWITCH
D	DIMMER SWITCH
K	KEYED SWITCH
T	TIMER SWITCH
M	MANUAL STARTER WITH THERMAL OVERLOAD
F	PADDLE FAN 3 SPEED CONTROL
OC	OCCUPANCY SENSOR SWITCH
ab$	CONTROLLING SWITCH (LETTER INDICATES CONTROL OF CORRESPONDING FIXTURES)
$$	DOUBLE GANG SWITCH
(S)	OCCUPANCY SENSOR (CEILING MOUNTED)
	MOTOR OUTLET
T	THERMOSTAT OUTLET
S	REMOTE SENSOR OUTLET
	EXHAUST FAN
B	BELL
	PUSHBUTTON
V	VOLUME CONTROL
	WALL SPEAKER
	CEILING SPEAKER
	TELEPHONE OUTLET
▷	COMPUTER DATA OUTLET
	NETWORK AND VOICE OUTLET
TV	TELEVISION OUTLET
P	PHOTOCELL
F	FIRE ALARM PULL STATION
	FIRE ALARM HORN/STROBE
	FIRE ALARM STROBE
	SMOKE DETECTOR (SUBSCRIPT AS INDICATED BELOW)
B	SMOKE ALARM BATTERY-BACKED
C	SMOKE/CARBON MONOXIDE ALARM COMBO BATTERY-BACKED
D	DUCT SMOKE DETECTOR
R	SMOKE DETECTOR WITH ADDRESSABLE RELAY
I	HEAT DETECTOR
	WALL MOUNTED EXIT LIGHT (SINGLE FACE)
	WALL MOUNTED EXIT LIGHT (DOUBLE FACE)
⊗	CEILING MOUNTED EXIT LIGHT
	CEILING MOUNTED EXIT LIGHT (DOUBLE FACE)
42X	FEEDER TAG (SEE FEEDER SCHEDULE)
D/H	DOOR HOLDER
F/S	FIRE/SMOKE DAMPER
	SECURITY CAMERA

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A NEW RETAIL DEVELOPMENT PLAN FOR
TIME SQUARE @ SARATOGA SPRINGS
SARATOGA SPRINGS UTAH
ELECTRICAL DETAILS

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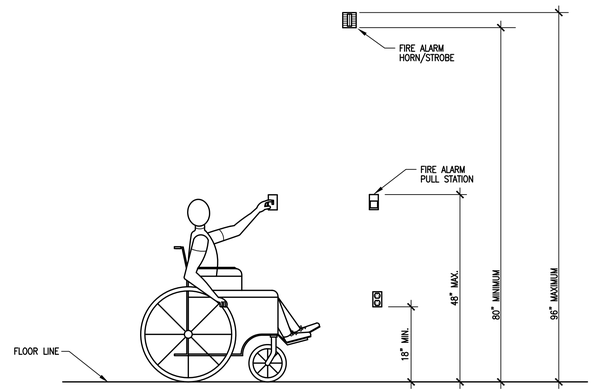
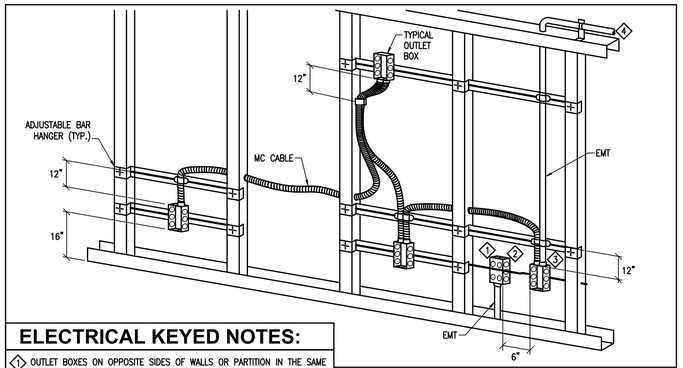


ELECTRICAL DEVICE MOUNTING HEIGHTS INSTALLATION DETAIL

SCALE: NONE



ELECTRICAL KEYED NOTES:

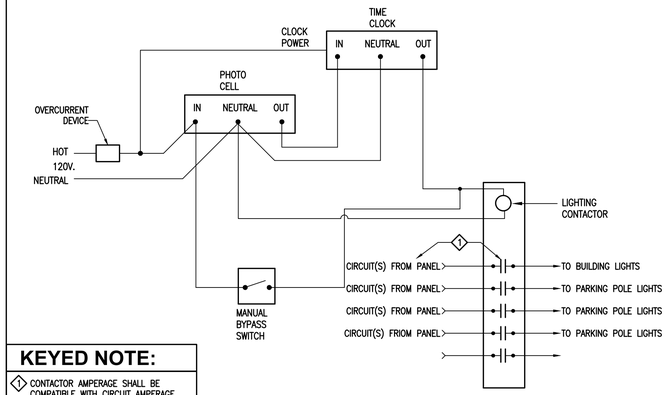
1. OUTLET BOXES ON OPPOSITE SIDES OF WALLS OR PARTITION IN THE SAME STUD SPACE MUST BE SEPARATED BY A MIN. OF 6" HORIZONTAL DISTANCE.
2. ELECTRICAL BOXES INSTALLED IN FIRE RESISTANT WALLS OR PARTITIONS SHALL COMPLY WITH IBC 712.3.2 (24" SEPARATION ON OPPOSITE SIDES.)
3. INSULATED THROAT EMT CONNECTOR.
4. HOME RUN TO PANEL MUST BE IN RACEWAY.

ELECTRICAL GENERAL NOTES:

1. TYPICAL FOR WOOD AND METAL STUD ROUGH IN.
2. PLASTER RINGS NOT SHOWN. COORDINATE RING DEPTH TO BE FLUSH WITH FINAL FINISH SURFACE.
3. LOCATE ALL OUTLET BOXES IN ACCORDANCE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS, AND WITH ALL APPLICABLE SHOP DRAWINGS.

TYPICAL ROUGH-IN REQUIREMENTS DETAIL FOR MC CABLE

SCALE: NONE



KEYED NOTE:

1. CONTACTOR AMPERAGE SHALL BE COMPATIBLE WITH CIRCUIT AMPERAGE

LIGHTING CONTROL WIRING DIAGRAM

SCALE: NONE

NOTE:

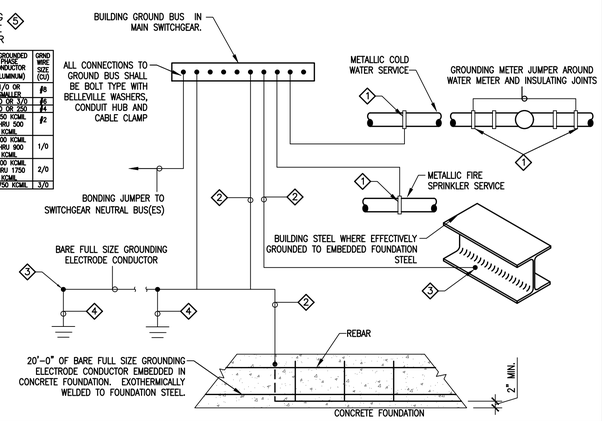
1. WHEN PRESENT CONTRACTOR SHALL PROVIDE ALL GROUNDING MEANS INDICATED. CONTRACTOR SHALL REFER TO ELECTRICAL ONE-LINE DIAGRAM AND GROUNDING ELECTRODE CONDUCTOR SCHEDULE (THIS DETAIL) FOR GROUNDING ELECTRODE CONDUCTOR SIZE. CONTRACTOR SHALL REFER TO ELECTRICAL SPECIFICATIONS FOR SPECIFICS OF GROUNDING SYSTEM INSTALLATION AND MATERIALS.
2. GROUNDING ROD SHALL BE MIN. 9FT. AWAY FROM IRRIGATION CONTROLLER.

KEYED NOTE:

1. T&B 3900 BU GROUND CLAMP WITH 3/4" CONDUIT HUB AND CABLE CLAMP
2. FULL SIZE GROUNDING ELECTRODE CONDUCTOR IN PVC.
3. EXOTHERMICALLY WELDED (TYPICAL)
4. DRIVEN GROUND RODS ⅝"x8' COPPER/STEEL ON BUILDING EXTERIOR
5. TABLE TAKEN FROM NEC 250.66. UNGROUNDED PHASE CONDUCTOR REFERS TO THE SIZE OF THE LARGEST UNGROUNDED SERVICE-ENTRANCE CONDUCTOR OR EQUIVALENT AREA FOR PARALLEL CONDUCTORS. SEE NEC 250.66.

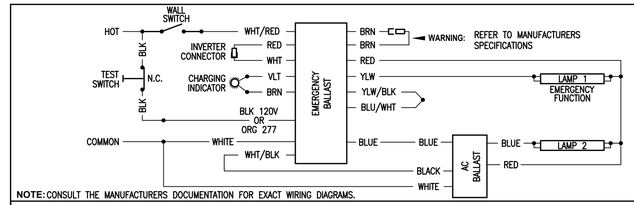
GROUNDING ELECTRODE CONDUCTOR (5)

UNGROUNDED PHASE CONDUCTOR (COPPER)	UNGROUNDED PHASE CONDUCTOR (ALUMINUM)	GRND WIRE SIZE (CU)
#2 OR SMALLER	1/0 OR SMALLER	#8
1 OR 1/0	2/0 OR 3/0	#6
2/0 OR 3/0	4/0 OR 250	#4
>3/0 THRU 350 KCMIL	>250 KCMIL THRU 500 KCMIL	#2
>350 KCMIL THRU 600 KCMIL	>500 KCMIL THRU 900 KCMIL	1/0
>600 KCMIL THRU 1100 KCMIL	>900 KCMIL THRU 1750 KCMIL	2/0
>1100 KCMIL	>1750 KCMIL	3/0



SERVICE GROUNDING DETAIL

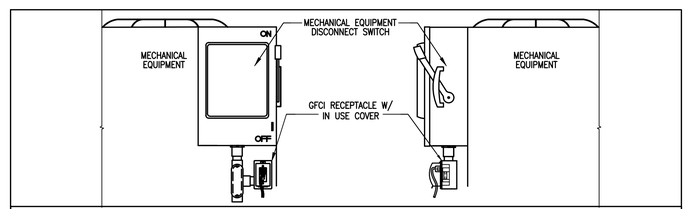
SCALE: NONE



NOTE: CONSULT THE MANUFACTURERS DOCUMENTATION FOR EXACT WIRING DIAGRAMS.

EMERGENCY BALLAST WIRING DIAGRAM

SCALE: NONE



WEATHERPROOF RECEPTACLE INSTALLATION DETAIL

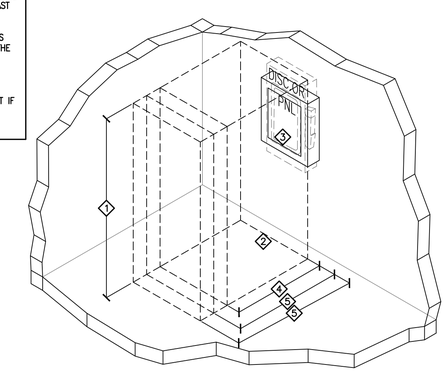
SCALE: NONE

KEYED NOTES:

1. THE MINIMUM HEADROOM OF WORKING SPACE SHALL BE 6½ FT.
2. THE WIDTH OF THE WORKING SPACE SHALL BE THE WIDTH OF THE EQUIPMENT OR 30 IN., WHICHEVER IS GREATER. THE PANEL DOOR SHALL OPEN AT LEAST 90 DEGREES.
3. ALL CIRCUIT BREAKERS OR DISCONNECT HANDLES SHALL BE NOT MORE THAN 6 FT 7 IN. ABOVE THE FLOOR WHEN IN THEIR HIGHEST POSITION.
4. 3 FT CLEARANCE IF 0-150V TO GROUND
5. 3.5FT CLEARANCE IF 151-600V TO GROUND. 4FT IF EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORKING SPACE.

GENERAL NOTE:

1. ALL WORKING SPACE CLEARANCE FROM FACE OF PANEL.



ELECTRICAL EQUIPMENT WORK SPACE CLEARANCES

SCALE: NONE

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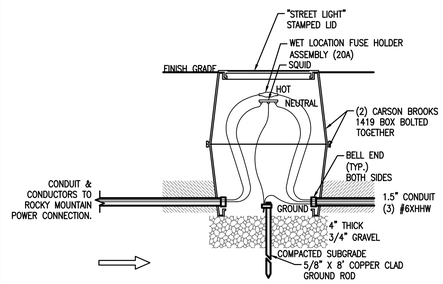
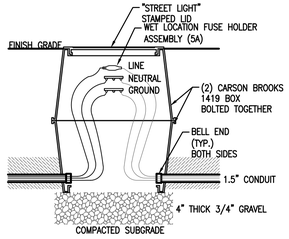
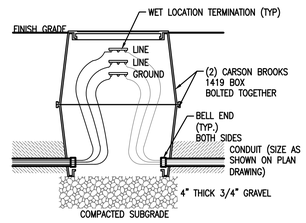


NOTES:

1. FUSE BOX / SLICE BOX ASSEMBLY SHALL BE (2) CARSON BROOKS 1419 BOLTED TOGETHER 'CLAMSHELL' STYLE . REMOVE LID ON BOTTOM BOX TO ALLOW DRAINAGE. INSTALL BOX ASSEMBLY ON 4" OF 3/4" GRAVEL.
2. FUSE ASSEMBLY SHALL BE (1) BUSSMAN HEB-JJ PN.44229 WITH (2) BUSSMAN 2A0660 PN. 44344.
3. WIRE CONNECTOR SHALL BE BLACKBURN USB33S SQUID PN.2136122.
4. TERMINATE CONDUIT IN BOXES WITH BELL ENDS ATTACHED TO END OF CONDUITS.
5. WIRE SHALL BE #6 CU XHHW UNLESS NOTED OTHERWISE.
6. 5/8" X 8' GROUND ROD REQUIRED AT FUSE BOX.
7. LIGHT POLE FUSE BOX SHALL BE 4' DOWNSTREAM OF POLE.
8. SERVICE CONNECTION FUSE BOX SHALL BE WITHIN 10' OF ROCKY MOUNTAIN POWER (RMP) SOURCE. FROM FUSE BOX AT BASE OF POWER POLE, INSTALL ONE 2", 90° SWEEP AT BASE OF POLE WITH 6' RISER, 6" AWAY FROM POLE (GRAY SCHED. 80). CONFIRM INSTALLATION REQUIREMENTS WITH ROCKY MOUNTAIN POWER REPRESENTATIVE AND PACIFICORP'S LATEST SIX STATES ELECTRICAL SERVICE REQUIREMENTS DOCUMENT.





POLE LIGHT BELOW GRADE BOXES INSTALLATION DETAILS

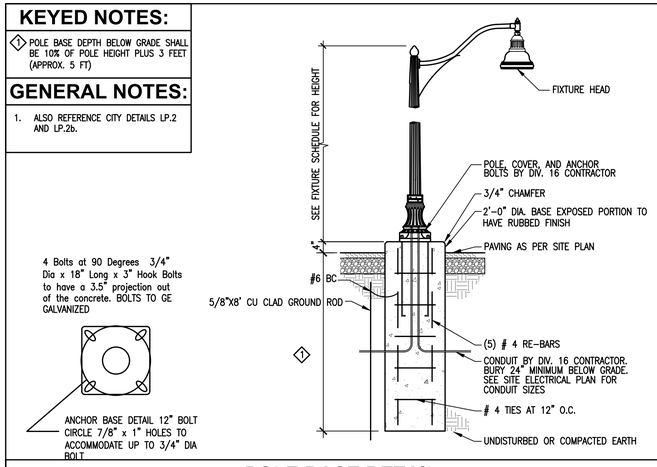
SCALE: NONE

KEYED NOTES:

1. POLE BASE DEPTH BELOW GRADE SHALL BE 10% OF POLE HEIGHT PLUS 3 FEET (APPROX. 5 FT)

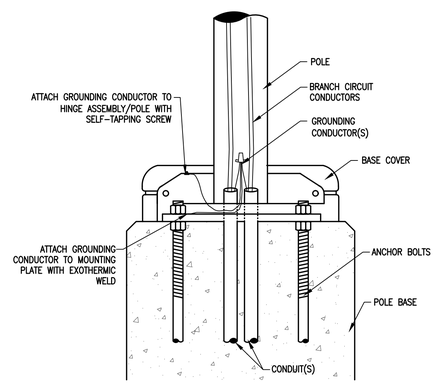
GENERAL NOTES:

1. ALSO REFERENCE CITY DETAILS LP.2 AND LP.2b.



POLE BASE DETAIL

SCALE: NONE

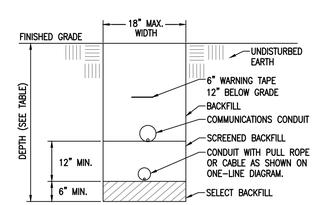


POLE LIGHT GROUNDING DETAIL

SCALE: NONE

LOCATION DESCRIPTION	DEPTH
BELOW CONCRETE SLAB (NOT TRAFFIC)	14 INCHES
BELOW TRAFFIC SURFACES	34 INCHES
PARKING LOT (PAVED OR NON-PAVED)	34 INCHES
OTHER LOCATIONS	28 INCHES
UTILITY SECONDARY	34 INCHES*
UTILITY PRIMARY	48 INCHES*

(SEE NEC TABLE 300.5)
* VERIFY ALL DIMENSIONS WITH LOCAL POWER COMPANY STANDARDS AND SPECIFICATIONS.



TRENCHING DETAIL

SCALE: NTS

ELECTRICAL GENERAL NOTES:

1. INSTALLATION OF POLE LIGHTS IN PUBLIC WAY SHALL CONFORM TO SARATOGA SPRINGS CITY STANDARDS SET FORTH IN "STANDARD MISCELLANEOUS DETAILS" PUBLISHED BY SARATOGA SPRINGS. APPLICABLE CITY DETAILS ARE LP.2, LP2.b AND LP2c.

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ELECTRICAL SPECIFICATIONS

GENERAL PROVISION
A. REFERENCE
1. THE GENERAL CONDITIONS AND OTHER CONTRACT DRAWINGS AS SET FORTH IN THE FOREGOING PAGES ARE HEREBY INCORPORATED INTO AND BECOME A PART OF THE SPECIFICATIONS FOR WORK UNDER THIS TITLE, INSOFAR AS THEY APPLY HERETO.
2. ALL SPECIFICATIONS UNDER THIS DIVISION TITLE ARE DIRECTED TO AND ARE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR, UNLESS OTHER TRADES OR PERSONS ARE SPECIFICALLY MENTIONED, “ELECTRICAL CONTRACTOR” IS INFERRED AND INTENDED.

B. CONTRACT DRAWINGS
1. THE DRAWINGS ACCOMPANYING THESE SPECIFICATIONS ARE COMPLEMENTARY EACH TO THE OTHER AND WHAT IS CALLED FOR BY ONE SHALL BE AS IF CALLED FOR BY BOTH.
2. CONSULT ALL CONTRACT DRAWINGS WHICH MAY AFFECT THE LOCATION OF EQUIPMENT, CONDUIT AND WIRING AND MAKE MINOR ADJUSTMENTS IN LOCATION TO SECURE COORDINATION.
3. WIRING LAYOUT IS SCHEMATIC AND EXACT LOCATIONS SHALL BE DETERMINED BY FIELD CONDITIONS.
4. OTHER THAN MINOR ADJUSTMENTS SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR APPROVAL BEFORE PROCEEDING WITH THE WORK.

C. JOB-SITE COPY OF DOCUMENTS
1. MAINTAIN AT THE SITE, ONE COPY OF ALL DRAWINGS, SPECIFICATIONS, ADDENDA APPROVED SHOP DRAWINGS, CHANGE ORDERS AND OTHER MODIFICATIONS, IN GOOD ORDER AND MARKED TO RECORD ALL CHANGES MADE DURING CONSTRUCTION. THESE SHALL BE AVAILABLE TO THE OWNER'S REPRESENTATIVE. THE DRAWINGS MARKED TO RECORD ALL CHANGES MADE DURING CONSTRUCTION SHALL BE DELIVERED TO THE OWNER'S REPRESENTATIVE FOR THE OWNER UPON COMPLETION OF THE WORK. AN ADDITIONAL SET OF DRAWINGS WILL BE FURNISHED BY THE OWNER'S REPRESENTATIVE FOR THIS PURPOSE UPON REQUEST.

D. MANUFACTURER'S DRAWINGS
1. THE CONTRACTOR SHALL SUBMIT TO THE ARCHITECT FOR REVIEW. (6) COPIES OF MANUFACTURER'S DRAWINGS AND WIRING DIAGRAMS. THE ENGINEER WILL REVIEW CONTRACTOR'S SHOP DRAWINGS AND RELATED SUBMITTALS (AS INDICATED BELOW) WITH RESPECT TO THE ABILITY OF THE DETAILED WORK, WHEN COMPLETE, TO BE A PROPERLY FUNCTIONING INTEGRAL ELEMENT OF THE OVERALL SYSTEM DESIGNED BY THE ENGINEER. BEFORE SUBMITTING A SHOP DRAWING OR ANY RELATED MATERIAL TO THE ENGINEER, CONTRACTOR SHALL: REVIEW EACH SUCH SUBMISSION FOR CONFORMANCE WITH THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND OPERATIONS OF CONSTRUCTION, AND SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO, ALL OF WHICH ARE THE SOLE RESPONSIBILITY OF CONTRACTOR: APPROVE EACH SUCH SUBMISSION BEFORE SUBMITTING IT; AND SO STAMP EACH SUCH SUBMISSION BEFORE SUBMITTING IT. THE ENGINEER SHALL ASSUME THAT NO SHOP DRAWING OR RELATED SUBMITTAL COMPRISES A VARIATION UNLESS CONTRACTOR ADVISES ENGINEER OTHERWISE VIA A WRITTEN INSTRUMENT WHICH IS ACKNOWLEDGED BY ENGINEER IN WRITING. THE ITEMS, TYPES OF SUBMITTALS AND RELATED MATERIAL (IF ANY) CALLED FOR ARE INDICATED BELOW:

ITEMS	TYPE SUBMITTALS REQUESTED
LIGHTING AND POWER PANELS	SHOP DRAWINGS
LIGHTING FIXTURES	CATALOG CUTS

E. GUARANTEES
1. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEFECTS, REPAIRS AND REPLACEMENTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR AFTER DATE OF SUBSTANTIAL COMPLETION AS DETERMINED BY THE OWNER'S REPRESENTATIVE. PRODUCT GUARANTEES GREATER THAN ONE (1) YEAR SHALL BE PASSED ALONG TO THE OWNER FOR FULL BENEFIT OF THE MANUFACTURER'S WARRANTY.

WORK INCLUDED
A. INSTALLATION, MATERIALS, AND WORKMANSHIP
1. FURNISH AND INSTALL ALL NECESSARY ANCHORS, SUPPORTS, STRAPS, BOXES, FITTINGS AND OTHER SIMILAR APPURTENANCES NOT INDICATED ON THE DRAWINGS BUT WHICH ARE REQUIRED FOR A COMPLETE AND PROPERLY INSTALLED SYSTEM CONSISTENT WITH THE ARCHITECTURAL TREATMENT OF THE BUILDING.
2. THE ELECTRICAL CONTRACTOR, INSOFAR AS THE WORK IS CONCERNED, SHALL AT ALL TIMES KEEP THE PREMISES IN A NEAT AND ORDERLY CONDITION. AND AT THE COMPLETION OF THE WORK, SHALL PROPERLY CLEAN UP AND CART AWAY DEBRIS AND EXCESS MATERIALS. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF DUMPSTER & REFUSED DISPOSAL AS REQUIRED FOR ELECTRICAL WORK.
3. ALL MATERIALS SHALL BE NEW AND UNDETERIORATED AND OF A QUALITY NOT LESS THAN THE MINIMUM SPECIFIED.

B. COORDINATION OF PLANS AND SPECIFICATIONS
1. CONTACT THE OWNER'S REPRESENTATIVE IMMEDIATELY IF THERE IS ANY QUESTIONS REGARDING THE MEANING OR INTENT OF EITHER PLANS OR SPECIFICATIONS, OR UPON NOTICING ANY DISCREPANCIES OR OMISSIONS IN EITHER PLANS OR SPECIFICATIONS.

C. CUTTING AND PATCHING
1. ALL ELECTRICAL EQUIPMENT SHALL BE KEPT DRY AND CLEAN DURING THE CONSTRUCTION PERIOD. INTERIOR OF ALL ENCLOSURES SHALL BE CLEANED OF DIRT AND DEBRIS BEFORE INSTALLING TRIM OR COVERS.
2. ALL FINISHED SURFACES OF EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL BE THOROUGHLY CLEANED OF DIRT AND ALL SCRATCHED OR DAMAGED SURFACES SHALL BE TOUCHED UP WITH MATCHING MATERIALS BEFORE FINAL ACCEPTANCE OF THE WORK.
3. WHEN ALL WORK IS COMPLETED AND ALL WORK HAS BEEN SATISFACTORILY TESTED AND ACCEPTED BY THE OWNER'S REPRESENTATIVE, ALL CONDUIT AND OTHER EXPOSED SURFACES SHALL BE THOROUGHLY CLEANED.

CODES AND FEES
A. CODES:
1. ALL WORK PERFORMED UNDER THIS SPECIFICATION SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AS PREPARED AND PUBLISHED BY THE NATIONAL FIRE PROTECTION ASSOCIATION AND ANY APPLICABLE STATE OR LOCAL CODES.

B. FEES:
1. OBTAIN AND PAY FOR ANY AND ALL PERMITS REQUIRED BY ALL LAWS AND REGULATIONS AND PUBLIC AUTHORITY HAVING SUCH JURISDICTION.

TESTS AND INSPECTIONS
A. OBTAIN ALL INSPECTIONS REQUIRED BY ALL LAWS, ORDINANCES, RULES, REGULATIONS OR PUBLIC AUTHORITY HAVING JURISDICTION AND OBTAIN CERTIFICATES OF SUCH INSPECTIONS AND SUBMIT SAME TO THE OWNER'S REPRESENTATIVE. PAY ALL FEES, CHARGES AND OTHER EXPENSES IN CONNECTION THEREIN. OBTAIN OCCUPANCY PERMIT AS REQUIRED BY OWNER. FINAL PAYMENT SHALL NOT BE MADE UNTIL OCCUPANCY PERMIT IS OBTAINED.
B. WORK SHALL BE UNACCEPTABLE WHEN FOUND TO BE DEFECTIVE OR CONTRARY TO THE PLANS SPECIFICATIONS, CODES SPECIFIED OR ACCEPTED STANDARDS OF GOOD WORKMANSHIP.
C. THE CONTRACTOR SHALL PROMPTLY CORRECT ALL WORK FOUND UNACCEPTABLE BY THE OWNER'S REPRESENTATIVE WHETHER OBSERVED BEFORE OR AFTER SUBSTANTIAL COMPLETION AND WHETHER OR NOT FABRICATED, INSTALLED OR COMPLETED. THE CONTRACTOR SHALL BEAR ALL COSTS OF CORRECTING SUCH UNACCEPTABLE WORK, INCLUDING COMPENSATION FOR THE OWNERS REPRESENTATIVE ADDITIONAL SERVICES MADE NECESSARY THEREBY.

CONDUIT
A. FURNISH AND INSTALL ALL CONDUITS, BOXES, FITTINGS, ETC., FOR A COMPLETE RACEWAY SYSTEM.
B. ALL WIRING SHALL BE RUN IN EMT CONDUIT OR MC CABLE WITH GROUND CONDUCTOR UNLESS OTHERWISE NOTED.
C. ALL CONDUIT SIZES STATED HEREIN OR MARKED ON THE DRAWINGS ARE MINIMUM SIZE AND SHALL BE NO LESS THAN ½" UNLESS OTHERWISE NOTED.
D. ALL CONDUIT SHALL BE SUBSTANTIALLY SUPPORTED BY PIPE STRAPS OR SUITABLE CLAMPS OR HANGERS ATTACHED TO THE ELEMENTS OF THE BUILDING STRUCTURE TO PROVIDE RIGID INSTALLATION; IN NO CASE SHALL CONDUIT BE ATTACHED OR SUPPORTED FROM ADJOINING PIPE OR INSTALLED IN SUCH A MANNER AS TO PREVENT THE READY REMOVAL OF OTHER PIPE FOR REPAIRS.

WIRE AND CABLE
A. ALL CONDUCTORS SHALL BE COPPER AND OF THE AWG SIZE AND TYPE SHOWN ON THE DRAWINGS. WHERE NO SIZE OR TYPE IS SHOWN. CONDUCTORS SHALL NOT BE LESS THAN #12 TYPE XHHW, THHN, OR THWN. CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED COPPER AND HAVE 600 VOLT INSULATION; BE UL LABELED AND OF AMERICAN MANUFACTURER.
B. ALL CONNECTIONS ARE TO BE MADE USING PRESSURE TYPE TERMINALS.
C. THE FOLLOWING COLOR CODE SHALL BE USED:

	120/240 VOLT	120/208 VOLT	277/480 VOLT
PHASE A	BLACK	BLACK	BROWN
PHASE B	RED	RED	ORANGE
PHASE C		BLUE	YELLOW
NEUTRAL	WHITE	WHITE	WHITE
GROUND	GREEN	GREEN	GREEN

D. CONDUCTORS NO. 10 AWG OR SMALLER SHALL HAVE INSULATION COLORED AS NOTED ABOVE.
E. CONDUCTORS NO. 8 AWG OR LARGER SHALL HAVE INSULATION COLORED AS NOTED ABOVE OR COLORED TAPE, MINIMUM SIZE ½", WRAPPED TWICE AROUND AT THE FOLLOWING POINTS:
1. AT EACH TERMINAL
2. AT EACH CONDUIT ENTRANCE
3. AT INTERVALS NOT MORE THAN 12 INCHES APART IN ALL BOXES, PANEL TUBS, SWITCHBOARDS, ETC

F. ALL BRANCH CIRCUITS SHALL BE MARKED IN THE PANEL BOARD GUTTERS. MARKERS SHALL INDICATE CORRESPONDING BRANCH--CIRCUIT NUMBERS.
G. EACH BRANCH CIRCUIT REQUIRING A NEUTRAL SHALL BE FURNISHED WITH A SEPARATE INDIVIDUAL NEUTRAL CONDUCTOR.

BOXES AND PLATES
A. FURNISH AND INSTALL ALL OUTLET, JUNCTION, AND PULL BOXES AS INDICATED ON THE DRAWINGS AND AS NECESSARY TO INSTALL THE REQUIRED CONDUIT AND WIRING IN A NEAT AND WORKMANLIKE MANNER.
B. PULL BOXES AND JUNCTION BOXES SHALL BE GALVANIZED AND OF THE CORRECT SIZE AND GAUGE, SIZED IN ACCORDANCE WITH CODE REQUIREMENTS AND SHALL BE U.L. LABELED.
C. BOXES AT EXTERIOR AREAS TO BE WATERTIGHT AND DUST-TIGHT WITH GASKETED COVERS.
D. ALL BOXES FOR EXPOSED WORK IN FINISHED SPACES SHALL BE "FS" TYPE WITH THREADED HUBS WITH RIGID CONDUIT RISER (DEEP WIRE MOLD BOXES)
E. ALL BOXES SHALL BE RIGIDLY SUPPORTED INDEPENDENT OF THE CONDUIT SYSTEM. BOXES CAST INTO MASONRY OR CONCRETE ARE CONSIDERED TO BE RIGIDLY SUPPORTED.

WIRING DEVICES
A. WIRING DEVICES SHALL BE SIMILAR TO THOSE LISTED BELOW AND OF SPECIFIED AMPERAGE. OTHER SPECIAL PURPOSE DEVICES SHALL BE AS SPECIFIED ON THE DRAWINGS.
B. DUPLEX GROUNDING TYPE RECEPTACLE--20 AMP, 125 VOLT--
1. HUBBELL--5352
2. ARROW HART--5352

C. SINGLE POLE SWITCHES - 20 AMP, 120 VOLT
D. WEATHERPROOF RECEPTACLES - 20 AMP, 125 VOLT--NEMA 5--20R
1. HUBBELL--5352 WITH 5205 COVER INTERMATIC GUARDIAN
2. I SERIES, NEMA 3R COVER
3. ARROW HART--5352 WITH 4500 COVER

E. G.F.C.I. RECEPTACLE- 20 AMP, 125 VOLT--NEMA 5-20 R
1. HUBBELL- GF 5262 WITH MATCHING NYLON COVER PLATE OR WO-26 W.P. COVER

F. GROUND ALL RECEPTACLES IN ACCORDANCE WITH ARTICLE 250-146 OF NEC AND AS INDICATED IN THE GROUNDING SECTION OF THIS SPECIFICATION.

IDENTIFICATION
A. EACH PIECE OF SERVICE EQUIPMENT AND INDIVIDUAL SWITCHES, ALL DISCONNECTS, STARTERS, ALL EXHAUST FAN MANUAL STARTING SWITCHES.
B. IDENTIFICATION SHALL BE IN THE FORM OF LAMINATED PLASTIC NAMEPLATES, BLACK RACE, WITH THE LETTERS ENGRAVED INTO THE WHITE BACKGROUND, MINIMUM ¼" HIGH. PLATES SHALL BE DRILLED ON EACH END FOR SHEET METAL SCREW ATTACHMENT. NO “DYMO” OR SIMILAR TYPE LABELS WILL BE ALLOWED.
C. PANEL BOARD DIRECTORY: A TYPED CIRCUIT DIRECTORY SHALL BE PROVIDED INDICATING LOCAL AREA SERVED AND LOCATION FOR EACH BRANCH CIRCUIT.

GROUNDING
A. ALL FEEDERS AND BRANCH CIRCUITS OVER 100 VOLTS SHALL INCLUDE A GROUNDING CONDUCTOR SIZED IN ACCORDANCE WITH NEC TABLE 250-122, EXCEPT NOT BE SMALLER THAN #12 FOR POWER AND LIGHTING CIRCUITS AND #14 FOR CONTROL CIRCUITS. ALL GROUND CONDUCTORS SHALL BE GREEN, OR AS SPECIFIED UNDER SECTION 16120, “WIRE AND CABLE”.
B. ALL GROUND CLAMPS SHALL BE PENN-UNION “GPL” TYPE OR SIMILAR BY O.Z. OR BURNDY.
C. CONDUIT FOR SOLITARY GROUND CONDUCTORS SHALL BE RIGID SCHEDULE 40 PVC NON- METALLIC ELECTRICAL CONDUIT WITH U.L. LABEL SOLITARY GROUND CONDUCTORS SHALL NOT BE PLACED THROUGH METALLIC SLEEVES OR CONDUITS AND SHALL NOT BE COMPLETELY ENCIRCLED BY METALLIC HANGERS OR SUPPORTS.
D. THE GROUND CONDUCTOR SHALL BE CONNECTED TO THE NEUTRAL IN ONLY TWO LOCATIONS -ON THE SUPPLY SIDE OF THE SERVICE DISCONNECT MEANS PER NEC--250--24 AND ON SEPARATELY DERIVED SYSTEMS PER NEC 250-30.
E. AT EACH RECEPTACLE BOX, THE GROUND CONDUCTOR SHALL ENTER AND CONNECT, WITH NORMAL WIRING CONNECTOR, TO: 1) THE GROUND PIGTAIL TO RECEPTACLE: 2) THE GROUND PIGTAIL TO THE BOX GROUND SCREW; AND 3) THE OUTGOING GROUND CONDUCTOR TO NEXT DEVICE, IF NOT AT END OF RUN. METAL TO METAL CONTACT BETWEEN THE DEVICE YOKE AND THE OUTLET BOX IS NOT ACCEPTABLE AS A BOND FOR EITHER SURFACE. MOUNTED BOXES OR FLUSH TYPE BOXES.
F. CONDUIT SYSTEM SHALL BE ELECTRICALLY CONTINUOUS. ALL LOCK NUTS SHALL CUT THROUGH ENAMELED OR PAINTED SURFACES ON ENCLOSURES. WHERE ENCLOSURES AND NON-CURRENT CARRYING METALS ARE ISOLATED FROM THE CONDUIT SYSTEM, USE BONDING JUMPERS WITH APPROVED CLAMPS. WHERE REDUCING WASHERS ARE USED AND WHERE CONCENTRIC OR ECCENTRIC KNOCKOUTS ARE NOT COMPLETELY REMOVED BONDING BUSHINGS SHALL BE REQUIRED.

POWER AND LIGHTING PANELS
A. FURNISH AND INSTALL, AS SCHEDULED AND SHOWN ON THE DRAWINGS, POWER PANELS FOR OPERATION ON VOLTAGES INDICATED.
B. ALL TERMINATIONS SHALL BE MARKED “75'C ONLY”, “60/75' C” OR LISTED FOR USE OF 75' C INSULATED CONDUCTORS AT FULL 75' C AMPACITY.
C. ALL BUS BARS SHALL BE SILVER OR TIN PLATED COPPER.
D. CABINETS SHALL BE OF COMMERCIAL GALVANIZED SHEET STEEL, CODE GAUGE AND SIZE, SURFACE OR RECESSED MOUNTED AS CALLED FOR IN THE DRAWINGS.
E. NEUTRAL ASSEMBLY SHALL HAVE INDIVIDUAL ANTI-TURN SOLDERLESS TERMINALS, SIMILAR TO SQUARE D TYPE PK, FOR CONNECTION OF ULTIMATE NUMBER OF NEUTRAL WIRES. SHEET METAL TERMINAL STRIPS AND CONNECTIONS WILL BE REJECTED.
F. PANEL SHALL HAVE A COPPER GROUND BAR SIMILAR TO NEUTRAL BAR IN NUMBER, SIZE, AND TYPE OF ANTI-TURN SOLDERLESS LUGS. THIS GROUND BAR SHALL BE FACTORY BONDED TO THE PANEL TUB IN THE GUTTER SPACE OPPOSITE THE MAINS AND THE NEUTRAL ASSEMBLY AND SHALL HAVE THE SCREWDRIVER SLOTS FACING THE FRONT OF THE PANEL.
G. QUALITY STANDARD: SQUARE D TYPE NQOD

LIGHTING FIXTURES
A. CONTRACTOR SHALL FURNISH AND INSTALL LIGHTING FIXTURES AND LAMPS AS INDICATED IN FIXTURE SCHEDULE SHOWN ON DRAWINGS, AND SPECIFIED HEREIN.
B. NEUTRAL ASSEMBLY SHALL HAVE INDIVIDUAL ANTI-TURN SOLDERLESS TERMINALS, SIMILAR TO SQUARE D TYPE PK, FOR CONNECTION OF ULTIMATE NUMBER OF NEUTRAL WIRES. SHEET METAL TERMINAL STRIPS AND CONNECTIONS WILL BE REJECTED.
C. ALL LAMP HOLDERS INSTALLED BY THE ELECTRICAL CONTRACTOR SHALL BE FURNISHED COMPLETE WITH NEW LAMPS OF THE SIZE INDICATING ON THE FIXTURE SCHEDULE.
D. LAMP CURRENT CREST FACTOR SHALL NOT EXCEED 1.8 AND SHALL BE COMPATIBLE WITH BALLAST BEING UTILIZED.
E. ANY FIXTURES SCRATCHED, BENT, CRACKED OR IN ANY WAY DAMAGED BEFORE ACCEPTANCE BY OWNER SHALL BE REPLACED AT THIS CONTRACTOR'S EXPENSE.
F. ALL LAMPS SHALL BE IN WORKING ORDER AT THE TIME OF FINAL ACCEPTANCE OF THE WORK BY THE OWNER.
G. ALL LIGHTING FIXTURES ARE TO BE GROUNDED ON THE INTERIOR OF THE FIXTURE HOUSING, ON CLEAN BARE METAL (FREE OF PAINT). BY USE OF PIGTAIL AND FASTENED BY A SCREW USED FOR NO OTHER PURPOSE.
H. FLUORESCENT FIXTURES SHALL COMPLY WITH 2008 NEC 410.73G (BALLAST DISCONNECT MEANS FOR DOUBLE ENDED LAMPS).
I. PACKAGED BATTERY SYSTEMS
1. LIGHTING PACKS
   a. PROVIDE APPROPRIATE BALLAST FOR SIZE AND TYPE OF LAMP.
   b. F32/T8 AND F28T5 LAMPS
      1) SHALL OPERATE ONE LAMP AT APPROXIMATELY 1400 LUMENS INITIALLY AND NOT LESS THAN 1000 LUMENS AFTER 90 MINUTES.
   c. TWO-PIN, QUAD-TUBE AND TWIN-TUBE LAMPS
      1) SHALL OPERATE ONE LAMP AT APPROXIMATELY 70% OF INITIAL LAMP LUMEN OUTPUT FOR MINIMUM 90 MINUTES.
   d. FOUR PIN, TRIPLE-TUBE LAMPS
      1) SHALL OPERATE ONE LAMP ATE APPROXIMATELY 28% OF INITIAL LAMP LUMEN OUTPUT FOR MINIMUM 90 MINUTES.
   e. BATTERY SHALL BE LONG LIFE NICKEL CADMIUM TYPE. CHARGER SHALL BE CAPABLE FULL RECHARGE IN 24 HOURS.
   f. UNIT SHALL BE COMPLETE WITH CHARGING INDICATOR LIGHT AND TEST SWITCH.
   g. APPROVED MANUFACTURERS AND MODELS-
      1) BODINE - B70A
      2) CHLORIDE - CFP841
      3) LITHONIA - PS-500
      4) IOTA - I-48
2. INSTALLATION
   a. INSTALL FLUORESCENT EMERGENCY LIGHTING PACK IN BALLAST CHANNEL WITH CHARGING INDICATOR LIGHT AND TEST SWITCH MOUNTED ON FIXTURE END, OR VISIBLE AND ACCESSIBLE THROUGH LENS.
   b. COMPACT FLUORESCENT EMERGENCY LIGHTING PACK MAY REQUIRE REMOTE LOCATION. INSTALL WITH CHARGING INDICATOR LIGHT AND TEST SWITCH MOUNTED IN JUNCTION BOX WITH COVERPLATE NEXT TO FIXTURE.
   c. WIRE SO UNIT CAN BE TESTED WITH LIGHTS ON.
   d. WIRE SO LAMPS IN NORMAL MODE ARE SWITCHED OFF WITH OTHER LIGHTING IN AREA. CONNECT EMERGENCY LIGHTING UNIT TO UNSWITCHED CONDUCTOR OF NORMAL LIGHTING CIRCUIT.

ALARM & DETECTION SYSTEMS
A. SUMMARY
1. INCLUDES BUT NOT LIMITED TO: FURNISH AND INSTALL MICROPROCESSOR-CONTROLLED, INTELLIGENT REPORTING FIRE ALARM EQUIPMENT REQUIRED TO FORM A COMPLETE COORDINATED SYSTEM THAT IS READY FOR OPERATION.

B. SYSTEM DESCRIPTION
1. THE FIRE ALARM SYSTEM SHALL COMPLY WITH REQUIREMENTS OF NFPA STANDARD NO. 72 FOR PROTECTED PREMISES SIGNALING SYSTEMS EXCEPT AS MODIFIED AND SUPPLEMENTED BY THIS SPECIFICATION. THE SYSTEM SHALL BE ELECTRICALLY SUPERVISED AND MONITOR THE INTEGRITY OF ALL CONDUCTORS.
2. THE SYSTEM SHALL BE AN ACTIVE/INTERROGATIVE TYPE SYSTEM WHERE EACH DEVICE IS REPETITIVELY SCANNED, CAUSING A SIGNAL TO BE TRANSMITTED TO THE MAIN FIRE ALARM CONTROL PANEL (FACP) INDICATING THAT THE ASSOCIATED INITIATING DEVICE AND NOTIFICATION APPLIANCE CIRCUIT WIRING IS FUNCTIONAL. LOSS OF SUCH A SIGNAL AT THE MAIN FACP SHALL RESULT IN A TROUBLE INDICATION AS SPECIFIED HEREINAFTER FOR THE PARTICULAR INPUT.
3. SYSTEM OPERATION: OPERATION OF MANUAL STATION OR AUTOMATIC ACTIVATION OF ANY SMOKE DETECTOR OR HEAT DETECTOR SHALL -
   a. CAUSE SYSTEM EVACUATION HORNS TO SOUND AND LAMPS TO FLASH.
   b. THE 80 CHARACTER LCD DISPLAY SHALL INDICATE ALL INFORMATION ASSOCIATED WITH THE FIRE ALARM CONDITION, INCLUDING THE TYPE OF ALARM POINT AND ITS LOCATION WITHIN THE PROTECTED PREMISES.
   c. INITIATE OFF-SITE ALARM NOTIFICATION.
   d. RELEASE MAGNETIC DOOR HOLDERS.
   e. INITIATE SHUT DOWN OF MECHANICAL UNITS WITH AIR FLOW IN EXCESS OF 2000CFM.
   f. INITIATE CLOSURE OF ALL FIRE/SMOKE DAMPERS.
4. WIRING: THE MULTIPLEX BUSS AND DATA COMMUNICATION BUS (OPTIONS BUS) SHALL BE WIRED WITH STANDARD NEC 760 COMPLIANT WIRING. ALL FACP SCREW TERMINALS SHALL BE CAPABLE OF ACCEPTING 14 AWG (1.8 MM) TO 18 AWG (1.2 MM) WIRE. ALL SYSTEM WIRING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 70, THE NATIONAL ELECTRICAL CODE (NEC) AND ALSO COMPLY WITH ARTICLE 760 OF THE NEC.

C. QUALITY ASSURANCE
1. REGULATORY REQUIREMENTS -
   a. SYSTEM SHALL MEET APPROVAL OF AUTHORITY HAVING JURISDICTION (AHJ). CHANGES OR ADDITIONS SHALL BE MADE TO THE SYSTEM AS REQUIRED WITHOUT ADDITIONAL COST TO OWNER.
   b. EQUIPMENT, DEVICES, AND CABLE SHALL BE UL OR FACTORY MUTUAL LISTED FOR USE IN FIRE ALARM SYSTEMS.
   c. DESIGNER QUALIFICATIONS: NICET LEVEL III OR IV (3 OR 4) CERTIFIED FIRE ALARM TECHNICIAN OR REGISTERED FIRE PROTECTION ENGINEER, EMPLOYED BY FIRE ALARM CONTROL PANEL MANUFACTURER, CONTRACTOR, OR INSTALLER.
   d. INSTALLER QUALIFICATIONS: FIRM WITH MINIMUM 3 YEARS DOCUMENTED EXPERIENCE INSTALLING FIRE ALARM SYSTEMS OF THE SPECIFIED TYPE AND PROVIDING CONTRACT MAINTENANCE SERVICE AS A REGULAR PART OF THEIR BUSINESS.
      1) AUTHORIZED REPRESENTATIVE OF CONTROL UNIT MANUFACTURER; SUBMIT MANUFACTURER'S CERTIFICATION THAT INSTALLER IS AUTHORIZED; INCLUDE NAME AND TITLE OF MANUFACTURER'S REPRESENTATIVE MAKING CERTIFICATION.
      2) INSTALLER PERSONNEL: FACTORY TRAINED AND CERTIFIED WITH AT LEAST 2 YEARS OF EXPERIENCE INSTALLING FIRE ALARM SYSTEMS.
      3) SUPERVISOR: NICET LEVEL III OR IV (3 OR 4) CERTIFIED FIRE ALARM TECHNICIAN; FURNISH NAME AND ADDRESS.

D. FACP COMPONENTS:
1. EQUIPMENT AND ACCESSORIES FURNISHED UNDER TERMS OF THIS SPECIFICATION SHALL BE STANDARD PRODUCTS OF SINGLE MANUFACTURER, OR INCLUDE WRITTEN STATEMENT BY CONTROL PANEL MANUFACTURER CONFIRMING COMPATIBILITY OF COMPONENTS AND INCLUSION OF THESE COMPONENTS UNDER SYSTEM WARRANTY.
2. THE MAIN FACP CENTRAL CONSOLE SHALL CONTAIN A MICROPROCESSOR BASED CENTRAL PROCESSING UNIT (CPU). THE FACP SHALL COMMUNICATE WITH AND CONTROL THE FOLLOWING TYPES OF EQUIPMENT USED TO MAKE UP THE SYSTEM: ADDRESSABLE DETECTORS, ADDRESSABLE MODULES, LOCAL AND REMOTE OPERATOR TERMINALS, ANNUNCIATORS, AND OTHER SYSTEM CONTROLLED DEVICES.
   a. THE MAIN FACP AND CENTRAL CONSOLE SHALL PERFORM THE FOLLOWING FUNCTIONS:
   b. SUPERVISE AND MONITOR ALL ADDRESSABLE DETECTORS AND MONITOR MODULES CONNECTED TO THE SYSTEM FOR NORMAL, TROUBLE AND ALARM CONDITIONS.
   c. SUPERVISE ALL NOTIFICATION CIRCUITS THROUGHOUT THE FACILITY.
   d. VISUALLY AND AUDIBLY ANNUNCIATE ANY TROUBLE, SUPERVISORY OR ALARM CONDITION ON OPERATOR'S TERMINAL, PANEL DISPLAY, AND ANNUNCIATORS.
3. THE FIRE ALARM CONTROL PANEL SHALL INCLUDE A FULL FEATURED OPERATOR INTERFACE CONTROL AND ANNUNCIATION PANEL WHICH SHALL INCLUDE A BACKLIT LIQUID CRYSTAL DISPLAY, INDIVIDUAL, COLOR CODED SYSTEM STATUS LEDS, AND AN ALPHA-NUMERIC KEYPAD FOR FIELD PROGRAMMING AND CONTROL OF THE FIRE ALARM SYSTEM.
4. THE SYSTEM SHALL INCLUDE EMERGENCY EVACUATION SIGNAL UTILIZING INTELLIGENCE SUCH THAT LOSS OF OPERATION BY THE MAIN FACP WILL NOT RESULT IN THE LOSS OF EVACUATION SIGNAL THROUGHOUT THE BALANCE OF THE BUILDING.
5. THE MAIN COMMUNICATION BUS (OPTIONS BUS) SHALL BE CAPABLE OF CLASS A OR CLASS B CONFIGURATION WITH A TOTAL BUS LENGTH OF 5,900 FEET (1,798 M).
6. OFF-SITE ALARM NOTIFICATION SYSTEM
   a. PROVIDE TELEPHONE LINE CONNECTION FROM TELEPHONE TERMINAL BOARD TO FIRE ALARM CONTROL PANEL.
   b. PROVIDE DIALER DEVICE TO NOTIFY OFF-SITE PERSONNEL OF ALARM OR ABNORMAL CONDITIONS.
   c. CONNECT TO FIRE ALARM CONTROL PANEL SO SPECIFIED CONDITIONS INITIATE OFF-SITE CALL. USE ONE ALARM CODE FOR ALARM AND SECOND CODE FOR SUPERVISORY/TROUBLE ALARM.
7. AUDIBLE HORN ALARM ANNUNCIATION -
   a. PROVIDE SEPARATE AND DISTINCT ALARM SIGNALS FOR ALARM AND TROUBLE CONDITIONS.
   b. ALARM SIGNAL SHALL ALSO OPERATE STROBE LIGHTS, IF SPECIFIED.
   c. PROVIDE ALARM SILENCE SWITCHES AT CONTROL PANEL.
   d. TROUBLE ALARM SHALL BE HORN INTEGRAL TO CONTROL PANEL.
   e. SUPERVISORY ALARM MAY BE SAME AUDIBLE ALARM AS TROUBLE ALARM, BUT WITH SEPARATE VISUAL ANNUNCIATION.

E. FIELD MOUNTED SYSTEM COMPONENTS
1. FIRE ALARM INITIATING DEVICES
   a. DUCT DETECTOR HOUSING: PROVIDE SMOKE DETECTOR DUCT HOUSING ASSEMBLIES TO MOUNT AN ADDRESSABLE DETECTOR ALONG WITH A STANDARD, RELAY OR ISOLATOR DETECTOR MOUNTING BASE. THE HOUSING SHALL ALSO PROTECT THE MEASURING CHAMBER FROM DAMAGE AND INSECTS. THE HOUSING SHALL UTILIZE AN AIR EXHAUST TUBE AND AN AIR SAMPLING INLET TUBE THAT EXTENDS INTO THE DUCT AIR STREAM UP TO TEN FEET. DRILLING TEMPLATES AND GASKETS TO FACILITATE LOCATING AND MOUNTING THE HOUSING SHALL ALSO BE PROVIDED. THE HOUSING SHALL BE FINISHED IN BAKED RED ENAMEL. REMOTE ALARM LED INDICATORS AND REMOTE TEST STATIONS SHALL BE PROVIDED.
   b. ADDRESSABLE SMOKE DETECTORS
      1) CEILING MOUNTED, ADDRESSABLE PHOTOELECTRIC
      2) UL LISTED COMPATIBLE WITH THE FIRE ALARM CONTROL PANEL.
      3) SHALL HAVE A FLASHING STATUS LED FOR VISUAL SUPERVISION. WHEN THE DETECTOR IS ACTUATED, THE FLASHING LED WILL LATCH ON SOLID. THE LED SHALL FLASH AT A 1/SEC RATE IF THE CHAMBER IS OUT OF CALIBRATION RANGE. THE DETECTOR MAY BE RESET BY ACTUATING THE CONTROL PANEL'S RESET SWITCH.
   c. SMOKE DETECTOR GUARDS
      1) UNDERWRITERS LABORATORIES TESTED AND LISTED BY FOR USE WITH THE SMOKE DETECTORS THEY PROTECT.
      2) GUARD DESIGN SHALL NOT AFFECT THE DETECTOR OPERATING SENSITIVITY AND SHALL NOT REDUCE THE LISTED DETECTOR SPACING.
      3) CONSTRUCTED OF 16-GAUGE STEEL WITH A BAKED WHITE FINISH TO MATCH THE DETECTORS.
      4) TAMPERPROOF MOUNTING HARDWARE SHALL BE PROVIDED.
   d. ADDRESSABLE FIXED TEMPERATURE-ROR HEAT DETECTOR
      1) ADDRESSABLE COMBINATION FIXED TEMPERATURE / RATE-OF-RISE
      2) NOMINAL FIXED TEMPERATURE ALARM POINT RATING OF 135°F (57°C) AND A RATE OF RISE ALARM POINT OF 15°F(9°C) PER MINUTE.
      3) RATED FOR CEILING INSTALLATION AT A MINIMUM OF 70 FT (21.3M) CENTERS AND BE SUITABLE FOR WALL MOUNT APPLICATIONS.
   e. DETECTOR BASES: STANDARD DETECTOR MOUNTING BASES SUITABLE FOR MOUNTING ON EITHER NORTH AMERICAN 1-GANG, 3½ OR 4 INCH OCTAGON BOX AND 4 INCH SQUARE BOX, OR EUROPEAN BESA OR 1-GANG BOX. THE BASE SHALL, CONTAIN NO ELECTRONICS AND SUPPORT ALL SERIES DETECTOR TYPES.
   f. ADDRESSABLE MANUAL STATION
      1) ADDRESSABLE DOUBLE ACTION, SINGLE STAGE
      2) POLYCARBONATE CONSTRUCTION WITH INTERNAL TOGGLE SWITCH.
      3) FINISHED IN RED WITH SILVER "PULL IN CASE OF FIRE" LETTERING
      4) SUITABLE FOR MOUNTING ON NORTH AMERICAN 2 ½ (64MM) DEEP 1-GANG BOXES AND 1 ½ (38MM) DEEP 4 SQUARE BOXES WITH 1-GANG COVERS.
2. FIRE ALARM ACTUATING DEVICES
   a. DOOR HOLDING DEVICES: DOOR RELEASE UNITS SHALL BE ELECTRICALLY OPERATED MAGNETIC DEVICES WHICH HOLD DOORS OPEN UNTIL RELEASED BY THE MAIN CONTROL UNIT. PROVIDE DOOR PLATES AND COORDINATE WITH THE GENERAL CONTRACTOR TO INSURE THAT THE PLATES ARE PROPERLY MOUNTED ON THE DOORS.
   b. NOTIFICATION APPLIANCES
      1) LOW PROFILE HORN-STROBES
         a) AUDIBLE OUTPUT OF 92 DBA AT 10 FT. WHEN MEASURED IN REVERBERATION ROOM PER UL-464.
         b) INTEGRALLY MOUNTED FLASHING LIGHT UNIT WITH BLOCK LETTERS 'FIRE'. MULTI-CANDELA WITH FIELD-SELECTABLE SETTINGS OF 15CD, 30CD, 60CD, 75CD & 110CD, AND FLASH RATE BETWEEN ONE AND THREE HERTZ. ALL UNITS SHALL FLASH IN SYNCHRONIZATION WITH EACH OTHER.
         c) THE HORN SHALL HAVE A SELECTABLE STEADY OR SYNCHRONIZED TEMPORAL OUTPUT.
         d) IN AND OUT SCREW TERMINALS SHALL BE PROVIDED FOR WIRING.
         e) LOW PROFILE HORN/STROBES SHALL MOUNT IN A NORTH AMERICAN 1-GANG BOX.
      2) LOW PROFILE STROBES
         a) PROVIDE LOW PROFILE WALL MOUNTED STROBES AT THE LOCATIONS SHOWN ON THE DRAWINGS. IN AND OUT SCREW TERMINALS SHALL BE PROVIDED FOR WIRING. STROBES SHALL PROVIDE SYNCHRONIZED FLASH OUTPUTS. STROBE OUTPUT SHALL BE DETERMINED AS REQUIRED BY ITS SPECIFIC LOCATION AND APPLICATION FROM A FAMILY OF 15CD, 30CD, 60CD, 75CD, OR 110CD DEVICES. LOW PROFILE STROBES SHALL MOUNT IN A NORTH AMERICAN 1-GANG BOX.
3. INITIATION & CONTROL MODULES
   a. RELAY MODULE
      1) PROVIDE ADDRESSABLE CONTROL RELAY CIRCUIT MODULES AS REQUIRED. THE MODULE SHALL PROVIDE ONE (1) FORM C DRY RELAY CONTACTS RATED AT 24VDC @ 2 AMPS (PILOT DUTY) TO CONTROL EXTERNAL APPLIANCES OR EQUIPMENT. THE POSITION OF THE RELAY CONTACT SHALL BE CONFIRMED BY THE SYSTEM FIRMWARE.

F. BATTERIES
1. SHALL BE 12 VOLT, GELL-CELL TYPE.
2. BATTERY SHALL HAVE SUFFICIENT CAPACITY TO POWER THE FIRE ALARM SYSTEM FOR NOT LESS THAN TWENTY-FOUR HOURS PLUS 5 MINUTES OF ALARM UPON A NORMAL AC POWER FAILURE.
3. THE BATTERIES ARE TO BE COMPLETELY MAINTENANCE FREE. NO LIQUIDS ARE REQUIRED. FLUID LEVEL CHECKS REFILLING, SPILLS AND LEAKAGE SHALL NOT BE REQUIRED.

G. INSTALLATION
1. INSTALL FIRE ALARM AND DETECTION SYSTEMS AS INDICATED, IN ACCORDANCE WITH EQUIPMENT MANUFACTURER'S WRITTEN INSTRUCTIONS, AND COMPLYING WITH APPLICABLE PORTIONS OF NEC, NFPA AND NECA'S "STANDARD OF INSTALLATION".
2. INSTALL WIRING, RACEWAYS, CONDUCTORS, ELECTRICAL BOXES AND FITTINGS IN ACCORDANCE WITH CONDUIT, WIRE AND CABLE, AND BOXES AND PLATES SECTION OF THIS SPEC.
3. LABEL PULL AND JUNCTION BOXES "FIRE ALARM" WITH RED INDELIBLE INK.
4. LOOP WIRES THROUGH EACH DEVICE ON ZONE FOR PROPER SUPERVISION. TEE-TAPS NOT PERMITTED.
5. PROVIDE DUST PROTECTION FOR INSTALLED SMOKE DETECTORS UNTIL FINISH WORK IS COMPLETED AND BUILDING IS READY FOR OCCUPANCY.
6. PROTECT CONDUCTORS FROM CUTS, ABRASION AND OTHER DAMAGE DURING CONSTRUCTION.
7. MINIMUM CONDUCTOR SIZE SHALL BE 14 AWG UNLESS OTHERWISE SPECIFIED.
8. DO NOT INSTALL CEILING MOUNTED DETECTORS WITHIN 3 FEET OF AIR DISCHARGE GRILLS. COORDINATE WITH OTHER TRADES AS REQUIRED.
9. POST COPY OF WIRE IDENTIFICATION LIST INSIDE FIRE ALARM PANEL DOOR OR OTHER AREA ACCESSIBLE TO FIRE ALARM SERVICE PERSONNEL.
10. PROVIDE DUCT SMOKE DETECTORS FOR ALL MECHANICAL UNITS WITH AIR FLOW IN EXCESS OF 2000 CFM AND TIE INTO FIRE ALARM CONTROL PANEL. PROVIDE FAN SHUT DOWN CIRCUIT AND ASSOCIATED CONTROL EQUIPMENT FOR ALL REQUIRED MECHANICAL UNITS.
11. INSTALL CONDUCTORS AND MAKE CONNECTIONS TO ALL, WATER FLOW SWITCHES, VALVE TAMPER SWITCHES, LOW AIR PRESSURE SWITCHES, AND DOOR HOLDING DEVICES.
12. INSTALL CONDUCTORS AND MAKE CONNECTIONS TO ALL FIRE/SMOKE DAMPERS. REFER TO MECHANICAL DRAWINGS FOR EXACT NUMBER AND LOCATIONS.

H. FIELD QUALITY CONTROL
1. TEST & INSPECTION
   a. ALL INTELLIGENT ADDRESSABLE DEVICES SHALL BE TESTED FOR CURRENT ADDRESS AND USER DEFINED MESSAGE.
   b. ALL WIRING SHALL BE TESTED FOR CONTINUITY, SHORTS, AND GROUNDS BEFORE THE SYSTEM IS ACTIVATED.
   c. ALL TEST EQUIPMENT, INSTRUMENTS, TOOLS AND LABOR REQUIRED TO CONDUCT THE TESTS SHALL BE MADE AVAILABLE BY THE INSTALLING CONTRACTOR.
   d. THE SYSTEM INCLUDING ALL ITS SEQUENCE OF OPERATIONS SHALL BE DEMONSTRATED TO THE OWNER, HIS REPRESENTATIVE, AND THE LOCAL FIRE INSPECTOR. IN THE EVENT THE SYSTEM DOES NOT OPERATE PROPERLY, THE TEST SHALL BE TERMINATED. CORRECTIONS SHALL BE MADE AND THE TESTING PROCEDURE SHALL BE REPEATED UNTIL IT IS ACCEPTABLE TO THE OWNER, HIS REPRESENTATIVES AND THE FIRE INSPECTOR.
   e. ALL FIRE ALARM TESTING SHALL BE IN ACCORDANCE WITH NATIONAL FIRE ALARM CODE, NFPA 72 - 2002, CHAPTER 10.

I. MANUFACTURER'S FIELD SERVICE -
1. INSTRUCT OWNER'S REPRESENTATIVE IN PROPER OPERATION AND MAINTENANCE PROCEDURES.
2. PROVIDE A MINIMUM OF 4 HOURS TRAINING.

TELEPHONE/DATA SYSTEMS
A. SUMMARY
1. INCLUDES BUT NOT LIMITED TO
   a. FURNISH AND INSTALL BUILDING TELEPHONE AND COMPUTER NETWORK RACEWAY AND CABLE SYSTEM AS DESCRIBED IN CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO, RACEWAY, OUTLETS, MODULAR JACKS, DEVICE PLATES, CABLES, PUNCH DOWN BLOCKS, BACKBOARDS, CABINETS, PATCH PANELS, GROUNDING AND OTHER MISCELLANEOUS ITEMS REQUIRED FOR A COMPLETE SYSTEM.
   b. FURNISH AND INSTALL MAIN SERVICE RACEWAY AS DESCRIBED IN CONTRACT DOCUMENTS AND TO COMPLY WITH TELEPHONE COMPANY REQUIREMENTS.

B. COMPONENTS
1. TELEPHONE OUTLET BOX SHALL BE SINGLE DEVICE BOX.
2. BUILDING TELEPHONE AND COMPUTER NETWORK SYSTEM CABLE
   a. 23 GAUGE, SOLID TINNED COPPER, FOUR TWISTED PAIRS. CATEGORY 6
   b. USE PLENUM-RATED CABLE IN CEILINGS AND AREAS USED FOR PLENUM AIR RETURN
3. TELEPHONE TERMINATION BLOCKS
   a. UL VERIFIED CATEGORY 3.
   b. 66 TERMINATION WITH TIN LEAD PLATED IDC
4. NETWORK PATCH PANELS
   a. UL VERIFIED CATEGORY 6
   b. 110 TERMINATION WITH TIN LEAD PLATED IDC
   c. 19" RACK MOUNT WITH BACKBOARD MOUNTING FRAME.
   d. 48 PORTS
5. TELEPHONE/NETWORK JACKS
   a. WALL JACKS
      1) CAT6 - HUBBELL HXJ6GYG OR ALTERNATE MANUFACTURER WITH EQUIVALENT PERFORMANCE STANDARD.
      2) CAT3 - HUBBELL HXJ3W OR ALTERNATE MANUFACTURER WITH EQUIVALENT PERFORMANCE STANDARD.
   b. PLATES
      1) HUBBELL - IFP SERIES (PORT QUANTITY AS REQUIRED, COLOR BY ARCHITECT)
6. BACKBOARDS: INTERIOR GRADE PLYWOOD WITHOUT VOIDS, ¾ INCH THICK; UL-LABELED FIRE RETARDANT.
   a. SIZE: 48 INCHES WIDE 96 INCHES HIGH.
   b. DO NOT PAINT OVER UL LABEL.
   c. PROVIDE ONE 48" MULTI-OUTLET POWER STRIP WITH INTEGRAL SURGE PROTECTION AND OUTLETS AT 6" O.C. (MINIMUM 7 OUTLETS) MOUNTED AT CENTER OF TERMINAL BOARD.
7. EQUIPMENT RACKS AND CABINETS: CEA-310 STANDARD 19 INCH WIDE COMPONENT RACKS.
   a. FLOOR MOUNTED RACKS: 16 GAGE STEEL CONSTRUCTION WITH CORROSION RESISTANT FINISH; VERTICAL AND HORIZONTAL CABLE MANAGEMENT CHANNELS, TOP AND BOTTOM CABLE TROUGHS, AND GROUNDING LUG.
8. CONNECTOR BLOCKS FOR CATEGORY 6 AND UP CABLING: TYPE 110 INSULATION DISPLACEMENT CONNECTORS; CAPACITY SUFFICIENT FOR CABLES TO BE TERMINATED PLUS 25 PERCENT SPARE.
9. PATCH PANELS FOR COPPER CABLING: SIZED TO FIT EIA STANDARD 19 INCH WIDE EQUIPMENT RACKS; 0.09 INCH THICK ALUMINUM; CABLING TERMINATED ON TYPE 110 INSULATION DISPLACEMENT CONNECTORS; PRINTED CIRCUIT BOARD INTERFACE.
   a. JACKS: NON-KEYED RJ-45, SUITABLE FOR AND COMPLYING WITH SAME STANDARDS CABLE TO BE TERMINATED; MAXIMUM 48 PORTS PER STANDARD WIDTH PANEL.
   b. CAPACITY: PROVIDE PORTS SUFFICIENT FOR CABLES TO BE TERMINATED PLUS 25 PERCENT SPARE PLUS MOUNTING SPACE FOR ALL ACTIVE COMPONENTS/EQUIPMENT REQUIRED TO CROSS-CONNECT TO ANY/ALL MODULAR JACK PORTS ON THE PATCH PANELS.
   c. LABELS: FACTORY INSTALLED LAMINATED PLASTIC NAMEPLATES ABOVE EACH PORT, NUMBERED CONSECUTIVELY; COMPLY WITH TIA/EIA-606 USING ENCODED IDENTIFIERS.
   d. PROVIDE INCOMING CABLE STRAIN RELIEF AND ROUTING GUIDES ON BACK OF PANEL.
   e. PATCH CORDS: PROVIDE ONE PATCH CORD FOR EACH PAIR OF PATCH PANEL PORTS.
10. CABLE MANAGEMENT
   a. EQUIP EACH RACK OR CABINET WITH VERTICAL CABLE SECTION.
   b. EQUIP EACH RACK OR CABINET WITH HORIZONTAL CABLE MANAGERS ABOVE AND BELOW EACH PATCH SECTION.
      1) 7 RINGS
      2) 6 PASS-THROUGH HOLES
      3) HINGED FRONT COVER
   c. USE VELCRO CABLE WRAPS ON ALL CABLE - TIE WRAPS ARE NOT ACCEPTABLE.

C. INSTALLATION
1. RUN 3/4" CONDUIT TO ACCESSIBLE CEILING SPACE FROM EACH OUTLET. INSTALL CABLE FROM TERMINAL BOARD TO EACH TELEPHONE/NETWORK OUTLET.
2. TERMINATE CABLES AT EACH OUTLET WITH SPECIFIED MODULAR JACK ASSEMBLY.
3. TERMINATE CABLES ON PUNCH DOWN BLOCKS OR PATCH PANELS AT TERMINAL BOARD.
4. PROVIDE TYPED LABELS AT ALL JACKS CORRESPONDING TO TYPED NUMBERING SYSTEM AT PATCH PANEL OR TERMINAL STRIP.

D. QUALITY ASSURANCE
1. COMPLY WITH APPLICABLE PORTIONS OF NEC ANSI/EIA/TIA 568 AS TO TYPE PRODUCTS USED AND INSTALLATION OF COMPONENTS. PROVIDE PRODUCTS AND MATERIALS WHICH HAVE BEEN UL-LISTED AND LABELED.

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A NEW RETAIL DEVELOPMENT PLAN FOR
TIME SQUARE @ SARATOGA SPRINGS
SARATOGA SPRINGS UTAH
ELECTRICAL SPECIFICATIONS

ROYAL ENGINEERING
ELECTRICAL MECHANICAL
2335 SOUTH STATE SUITE 100 PROVO, UTAH 84606
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CHECKED	KLB
DATE	NOVEMBER 2013
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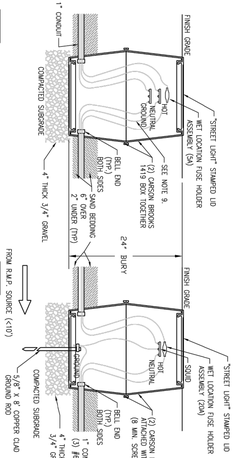


A LIGHT POLE FUSE BOX DETAIL

B SERVICE CONNECTION FUSE BOX DETAIL

NOTES:

1. FUSE BOX / SLICE BOX ASSEMBLY SHALL BE (2) CARSON BROOKS 1419 BOLTED TOGETHER "CLAMSHELL" STYLE. DRILL 1/4" HOLES IN EVERY CELL OF LID ON BOTTOM BOX TO ALLOW DRAINAGE. INSTALL BOX ASSEMBLY ON 4" OF 3/4" GRAVEL. NO SUBSTITUTES.
2. FUSE ASSEMBLY SHALL BE (1) BUSSMAN HEB-JJ PN. 44229 WITH (2) BUSSMAN 2A0660. NO SUBSTITUTES.
3. WIRE CONNECTOR SHALL BE BLACKBURN USB335 SOLID PN. 2136122. NO SUBSTITUTES.
4. TERMINATE CONDUIT IN BOXES WITH BELL ENDS ATTACHED TO END OF CONDUITS.
5. ALL WIRE SHALL BE #6 CU XHHW UNLESS NOTED OTHERWISE.
6. 5/8" X 8' GROUND ROD REQUIRED AT SERVICE CONNECTION FUSE BOX.
7. LIGHT POLE FUSE BOX SHALL BE WITHIN 4' DOWNSTREAM OF POLE.
8. SERVICE CONNECTION FUSE BOX SHALL BE WITHIN 10' OF ROCKY MOUNTAIN POWER (RMP) SOURCE. CONFIRM INSTALLATION REQUIREMENTS WITH ROCKY MOUNTAIN POWER REPRESENTATIVE AND PACIFICORP'S LATEST SIX STATES ELECTRICAL SERVICE REQUIREMENTS DOCUMENT.
9. IF FIXTURE IS NOT INDICATED FOR INSTALLATION WITH CURRENT CONTRACT ONLY CONDUIT IS REQUIRED. SOME CONDUCTORS INDICATED MAY BE INSTALLED WITH FUTURE UPGRADES.
10. SERVICE FUSE TO BE BUSSMAN KTK AND SIZED 5 AMPS PER FIXTURE. POLE FUSE TO BE BUSSMAN KTK 5 AMP PER FIXTURE.

LIGHT POLE BELOW GRADE BOXES INSTALLATION DETAILS

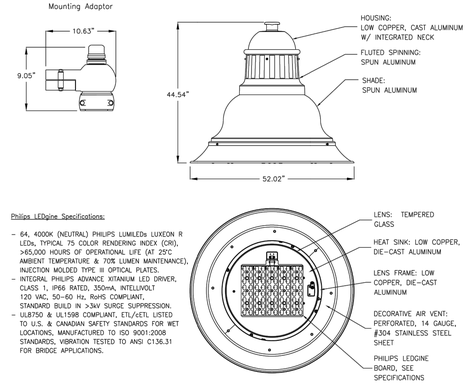
DATE: APRIL 2014 | DRAWN BY: | DRAWING NAME: LP4 | DRAWN BY: | CHECKED | APPROVED

REVISIONS: COMMENTS

SARATOGA SPRINGS CITY

STANDARD DETAILS | STREET LIGHTS | LP-6

MSL ORDERING GUIDE:
C12750A: LUMINARE
CA12750a: ARM ADAPTOR W/ PC
COLOR: BLACK



Philips LEDgine Specifications:

- 64, 4000K (NEUTRAL) PHILIPS LUMILEDs LUXEON R LEDs, TYPICAL 75 COLOR RENDERING INDEX (CRI), >65,000 HOURS OF OPERATIONAL LIFE (AT 25°C AMBIENT TEMPERATURE & 70% LUMEN MAINTENANCE), INJECTION MOLDED TYPE III OPTICAL PLATES.
- INTEGRAL PHILIPS ADVANCE XITANIUM LED DRIVER, CLASS 1, IP66 RATED, 350mA, INTELLIVOLT 120 VAC, 50-60 Hz, RoHS COMPLIANT, STANDARD BUILD IN >3kV SURGE SUPPRESSION.
- UL8750 & UL1598 COMPLIANT, ETL/cETL LISTED TO U.S. & CANADIAN SAFETY STANDARDS FOR WET LOCATIONS, MANUFACTURED TO ISO 9001:2008 STANDARDS, VIBRATION TESTED TO ANSI C136.31 FOR BRIDGE APPLICATIONS.

ARTERIAL STREET LIGHT LUMINARE

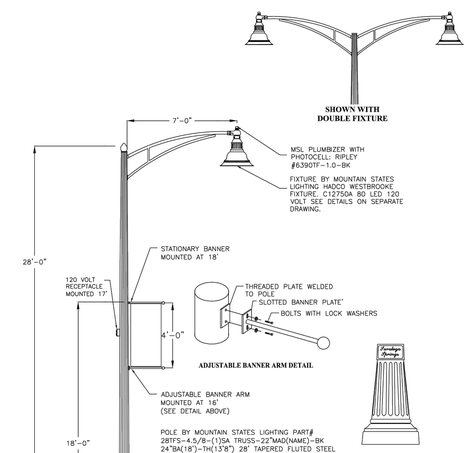
DATE: APRIL 2014 | DRAWING NAME: LP-3C | DRAWN BY: CJG | CHECKED | APPROVED

REVISIONS: COMMENTS

SARATOGA SPRINGS CITY — 1307 N. COMMERCE DR. #300, SARATOGA SPRINGS, UT 84045 PHONE: 801.766.9793 FAX: 801.766.9794

STANDARD DETAILS | STREET LIGHTS | LP-3C

FIXTURE TYPE S3



POLE BY MOUNTAIN STATES LIGHTING PART# 28TFS-4.5/8-(1)SA TRUSS-22"MAD(NAME)-BK 24"BA(18")-TH(13'8") 28' TAPERED FLUTED STEEL STEEL PAINTED WITH FIRST 16" OF POLE AND BASE PLATE TO BE COATED WITH INDUSTRIAL ZINC COATING MIN EPA OF 12 IN 100 MPH ZONE (1.3 GUST FACTOR)

BASE BY MOUNTAIN STATES LIGHTING HIGH DENSITY ELASTOMER DECORATIVE BASE, DENSITY OF 71 LBS PER CUBIC FOOT. PAINTED BLACK. HANDHOLE BEHIND TWO-PIECE BASE

28' ARTERIAL STREET LIGHT WITH BANNER ARM

DATE: APRIL 2014 | DRAWING NAME: LP-3A | DRAWN BY: CJG | CHECKED | APPROVED

REVISIONS: COMMENTS

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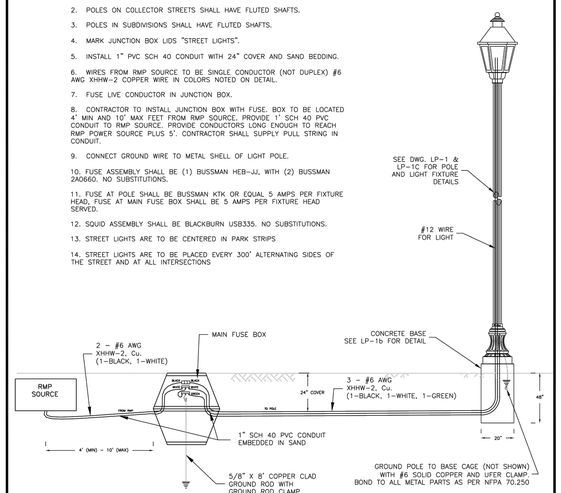
STANDARD DETAILS | STREET LIGHTS | LP-3A

NOTES:

1. STREET LIGHTS POLES SHALL BE LOCATED AT ROADWAY INTERSECTIONS (NEAR FIRE HYDRANTS WHERE POSSIBLE) AND AT OTHER REQUIRED LOCATIONS PER CITY STANDARDS.
2. POLES ON COLLECTOR STREETS SHALL HAVE FLUTED SHAFTS.
3. POLES IN SUBDIVISIONS SHALL HAVE FLUTED SHAFTS.
4. MARK JUNCTION BOX LIDS "STREET LIGHTS".
5. INSTALL 1" PVC SCH 40 CONDUIT WITH 24" COVER AND SAND BEDDING.
6. WIRES FROM RMP SOURCE TO BE SINGLE CONDUCTOR (NOT DUPLEX) #6 AWG XHHW-2 COPPER WIRE IN COLORS NOTED ON DETAIL.
7. FUSE LIVE CONDUCTOR IN JUNCTION BOX.
8. CONTRACTOR TO INSTALL JUNCTION BOX WITH FUSE. BOX TO BE LOCATED 4' MIN AND 10' MAX FEET FROM RMP SOURCE. PROVIDE 1" SCH 40 PVC CONDUIT TO RMP SOURCE. PROVIDE CONDUCTORS LONG ENOUGH TO REACH RMP POWER SOURCE PLUS 5'. CONTRACTOR SHALL SUPPLY PULL STRING IN CONDUIT.
9. CONNECT GROUND WIRE TO METAL SHELL OF LIGHT POLE.
10. FUSE ASSEMBLY SHALL BE (1) BUSSMAN HEB-JJ, WITH (2) BUSSMAN 2A0660. NO SUBSTITUTIONS.
11. FUSE AT POLE SHALL BE BUSSMAN KTK OR EQUAL 5 AMPS PER FIXTURE HEAD, FUSE AT MAIN FUSE BOX SHALL BE 5 AMPS PER FIXTURE HEAD SERVED.
12. SQUID ASSEMBLY SHALL BE BLACKBURN USB335. NO SUBSTITUTIONS.
13. STREET LIGHTS ARE TO BE CENTERED IN PARK STRIPS
14. STREET LIGHTS ARE TO BE PLACED EVERY 300' ALTERNATING SIDES OF THE STREET AND AT ALL INTERSECTIONS



RESIDENTIAL STREET LIGHT CONNECTION DETAIL

DATE: APRIL 2014 | DRAWING NAME: LP-4 | DRAWN BY: CJG | CHECKED | APPROVED

REVISIONS: COMMENTS

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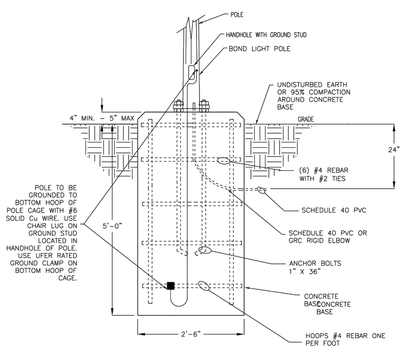
STANDARD DETAILS | STREET LIGHTS | LP-4

NOTE!
IF DEPTH CANNOT BE MET MASS MUST BE EQUIVALENT TO MASS SHOWN



CONCRETE BASE DETAIL FOR 28' ARTERIAL

DATE: APRIL 2014 | DRAWING NAME: LP-3B | DRAWN BY: CJG | CHECKED | APPROVED

REVISIONS: COMMENTS

SARATOGA SPRINGS CITY

STANDARD DETAILS | STREET LIGHTS | LP-3B

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REVISIONS	BY

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A NEW RETAIL DEVELOPMENT PLAN FOR
TIME SQUARE @ SARATOGA SPRINGS
SARATOGA SPRINGS UTAH

DRAWN: DCE
CHECKED: KLB
DATE: NOVEMBER 2013
SCALE: SEE PLAN
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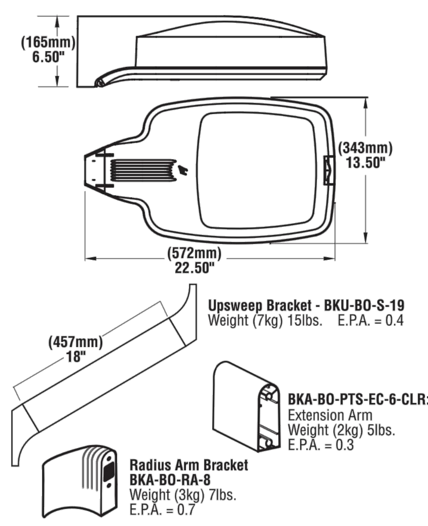
PATRIOT SMALL (Various reflectors are protected by U.S. Patent No. 6,464,378.)

DIMENSIONS



HOUSING - One-piece, die-cast aluminum in a multi-radiused, rectangular shape with mounting arm cast in as an integral part of the housing. All hardware is stainless steel or electro-zinc plated steel.

DOOR FRAME - The Patriot Small has a one-piece, die-cast aluminum door frame which secures to the housing with a hinge bracket. An integral over-center latch allows easy tool-less access. Door frame may then be easily removed from housing. Door is provided with a catch mechanism that limits door swing. A one-piece extruded silicone gasket seals the door frame against the housing. The standard housing/door seal design prevents external contaminants from entering the fixture.

LENS/GASKET - The Patriot Small is available with a tempered flat clear glass lens. A one-piece extruded silicone gasket seals the lens to the die-cast aluminum door frame.

SOCKETS - Porcelain medium-base sockets are supplied on fixtures 150 watt HID and below. Porcelain mogul-base sockets are supplied on 175, 250, and 320 watt HID fixtures. All HID sockets are factory prewired with a disconnect plug for the ballast, and are pulse-rated.

LIGHT SOURCES - Pulse-Start Metal Halide, Ceramic Metal Halide, Metal Halide, and High Pressure Sodium lamps. A clear lamp is supplied as standard.

BALLASTS - HID high-power factor ballasts, designed for -20°F operation. Optional HID Quick Connect package includes supply wiring plus modular plugs for easy ballast wiring and a removable ballast tray.

REFLECTORS/DISTRIBUTION PATTERNS - The Patriot Small is available with a wide variety of reflectors, including Type II (2), Type III (3), Type V (5), and Forward Throw (FT). All reflectors are field-rotatable, enabling generous flexibility in distribution patterns, without fixture movement. Photometric data is tested in accordance with IESNA guidelines.

BRACKETS - Use with 5" traditional drilling pattern. The integral cast mounting arm is flat, for square pole applications. The fixture may also be mounted to round poles using the round pole adaptor accessory (RPPC), which must be ordered separately. An extruded 6" arm extension is available (but not required) for D90°, Q90°, T90° and TN120° fixture configurations. A locking nut secures two through bolts and a reinforcing plate to the pole, stabilizing it for easy fixture mounting.

SHIELDING - External House Side Shields are available for field installation with Types 2, 3, and FT distributions.

FINISHES - Each fixture is finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling, and is guaranteed for five full years. Standard colors include bronze, black, white, satin verde green, platinum plus, graphite and metallic silver.

PHOTOMETRICS - Please visit our web site at www.lsi-industries.com for detailed photometric data.

LUMINAIRE EPA CHART - Patriot Small	Flat Glass
Single	1.1
D180°	2.1
D90°	1.6
T90°	2.7
TN120°	2.8
Q90°	3.2

Note: House Side Shield adds to fixture EPA. Consult factory.

c UL us LISTED wet location — IP65* * Lamp Compartment Only

American Innovation American Made — ARRA Funding Compliant

SHIPPING WEIGHTS - Patriot Small				
Catalog Number	Est. Weight (kg/lbs.)	Length (mm/in.)	Width (mm/in.)	Height (mm/in.)
PTHS	13.2/29	622/24-1/2	394/15-1/2	203/8

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ALUMINUM ROUND POLES

POLE ORDERING INFORMATION

TYPICAL ORDER EXAMPLE: **5RPB5 A188 20 S BRZ**

Pole Series	Material	Height [3]	Mounting Configuration	Pole Finish	Options
Bolt-On Mount[1] - See selection guide for patterns and fixture matches. **4RPB3** - 3" Reduced Drilling Pattern **5RPB3** - 3" Reduced Drilling Pattern **4RPB5** - 5" Traditional Drilling Pattern **5RPB5** - 5" Traditional Drilling Pattern	A125 - .125 Aluminum A156 - .156 Aluminum A188 - .188 Aluminum	8' 10' 12' 14' 16' 18' 20'	S - Single/Parallel D180° - Double D90° - Double T90° - Triple TN120° - Triple Q90° - Quad	BRZ – Bronze BLK – Black WHT – White SVG - Satin Verde Green MSV - Metallic Silver	RHH - Reinforced Hand Hole[4] FP - Festoon Outlet Provision Less GFI Kit[5] FPG - Festoon Outlet Provision With GFI Kit[5] LAB - Less Anchor Bolts
Tenon Mount - See selection guide for tenon and fixture/bracket matches. **4RPN** **5RPN[2]**			N – Tenon Mount 4N - Tenon Mount (Available with 5RPN only. For 4" poles, use 4RPSF below)		
Greenlee Slipfit - Use with Greenlee Lifestyle CC, SC & CH mounting styles. Enterprise, Intrepid & Lexington PT single mounting styles [2] **4RPSF**	Consult Pole Selection Chart on opposite page		*		
Greenlee Universal Bracket[1] (No Drilling) - Use with Lifestyle UCLS and UCLD180 **4RPI** **5RPI**					

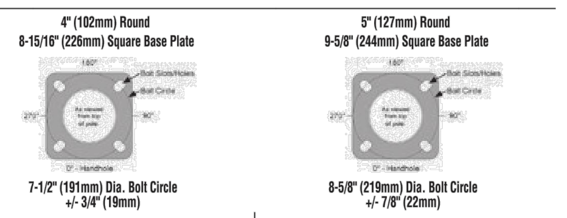
FOOTNOTES:
1 - Standard pole cap provided. Domed Greenlee pole cap will ship with SA4 and SA5 Enterprise, Intrepid and Lexington fixtures, SA Lifestyle fixtures, BK SPT BO, BK MPT BO and UCL brackets.
2 - For Enterprise, Intrepid and Lexington D180° or other mounting configuration styles using BK SPT BO and BK MPT BO accessories, order 4RPB3 or 5RPB3 pole.
3 - Pole heights will have +/- 2" tolerance.
4 - Reinforced hand-holes are 2-3/8" x 4" on 4" dia. round poles and 3" x 5" on 5" dia. round poles. Both are located 18" above bottom of pole base.
5 - Specify location in feet above base of pole and side orientation. Minimum height is 18" above standard hand hole.

ACCESSORY ORDERING INFORMATION (Accessories are field installed)

Description	Order Number
4 / 5 GBC - Decorative Base Cover	483859CLR
4RSAC - 4" Round 1-Piece Spun Aluminum Collar	506859CLR
5RSAC - 5" Round 1-Piece Spun Aluminum Collar	506860CLR
BBB - Breakaway Banner Brackets+	Consult Factory+

+Banner Brackets will add EPA to pole.

BOLT CIRCLE



	E	F
Bolt Circle	7-1/2" +/- 3/4" (191mm +/- 19mm)	8-5/8" +/- 7/8" (219mm +/- 22mm)
Anchor Bolt Size	3/4" dia. x 17" x 3" hook (19mm x 432mm x 76 mm)	3/4" dia. x 17" x 3" hook (19mm x 432mm x 76 mm)
Anchor Bolt Projection	3-1/4" (83mm)	3-1/4" (83mm)
Base Plate Dimensions	8-15/16" sq. x 5/8" thk. (226mm x 16mm)	9-5/8" sq. x 5/8" thk. (244mm x 16mm)

Note: Base plate illustrations may change without notice. Do not use for setting anchor bolts. Consult factory for the base plate templates.

EPA INFORMATION

All poles are guaranteed to meet the EPA requirements listed. Pole manufacturer is not responsible if a pole order has a lower EPA rating than the indicated wind-loading zone where the pole will be located.
CAUTION: This guarantee does not apply if the pole/bracket/fixture combination is used to support any other items such as flags, pennants, or signs, which would add stress to the pole. Pole manufacturer cannot accept responsibility for harm or damage caused in these situations.

NOTE: Pole calculations include a 1.3 gust factor over steady wind velocity. Example: poles designed to withstand 80 MPH steady wind will withstand gusts to 104 MPH. EPAs are for locations 100 miles away from hurricane ocean lines. Consult LSI for other areas. Note: Hurricane ocean lines are the Atlantic and Gulf of Mexico coastal areas. For applications in Canada, areas using code requirements other than AASHTO LTS-3-94, and for banner brackets, consult factory.

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LED GREENBRIAR® WALL SCONCE (XGBWM3)

Crossover® LED LIGHTING TECHNOLOGY

Shown with optional decal striping

US patent 7828456, 8002428 and CAN 2736757 & 2736757 and MX patent 29631 and ISRL 49679 and AUS 2008312668 and US & Int'l. patents pending

SMARTTEC™ ENERGY SAVING FEATURES:

THERMAL CONTROL - Sensors in both optical and driver enclosure reduce driver current when ambient temperatures exceed 50°C. Current is lowered in imperceptible 5% increments every 5 minutes until safe operating temperature is reached.

OPTIONAL INTEGRAL MOTION SENSOR - Passive infrared motion sensor activates switching of luminaire light levels. High level light is activated when passersby enter target zone and increased to full bright in 1-2 seconds. Low light level (30% of maximum drive current) is activated when target zone is absent of motion activity for 5 minutes and is gradually ramped down (10 seconds) to low level. Sensor detection range 110° horizontal x 93° vertical x 10 meters maximum distance.

EXPECTED LIFE - Minimum 60,000 hours to 100,000 hours depending upon the ambient temperature of the installation location. See LSI web site for specific guidance.

LEDS - Available with 28 or 48 select high-brightness LEDs in Cool White (5300°K nominal) or Neutral White (4200°K nominal) color temperature, 70 CRI (nominal).

OPTICS/DISTRIBUTIONS - Ultra-high efficiency reflectors provide three distributions. Choose from Wide Throw (WT), Forward Throw (FT) or Wall Wash (WW).

HOUSING - The aerodynamic aluminum housing is a rectangular shape. All mounting hardware is stainless steel or electro-zinc plated steel. Housing and optical unit are sealed with extruded silicone gasket; supply conductors with molded EPDM bushing.

OPTICAL UNIT - Clear tempered optical-grade flat glass lens sealed to the aluminum optic housing creates an IP67 rated unit. Pressure stabilizing breather allows super-tight protection while preventing cycling from building up internal pressures and vacuums that can stress optical unit seals.

WALL MOUNTING - Galvanized-steel universal wall mounting plate easily mounts directly to 4" octagonal or square junction box. EPDM gasket is supplied to be installed between mounting plate and junction box, sealing junction box from entrance of water. Universal plate permits fixture to be mounted in uplighting (indoor only) or downlighting position.

POLE MOUNTING - XPMA (for square) or XPMAR (for round) allows mounting to poles in single and D180 configurations. Use with 3" reduced drilling pattern.

ELECTRICAL - Two-stage surge protection (including separate surge protection built into electronic driver) meets IEEE C62.41.2-2002, Scenario 1, Location Category C. Available with universal voltage power supply 120-277VAC (50/60Hz input) or 347-480VAC.

DRIVER - Available in 350mA and 450mA drive currents (Drive currents are factory programmed). Components are fully encased in potting material for IP65 moisture resistance. Driver complies with IEC and FCC standards. Driver can be easily accessed and removed.

EMERGENCY OPTIONS - Integral emergency battery-back-up options are available. BB option operates in 0°C to 60°C ambient temperature and CWBB operates in -20°C to 60°C ambient temperature. When primary AC power failure occurs, both options operate 10 LEDs for minimum of 90 minutes.

OPERATING TEMPERATURE - -40°C to +50°C (-40°F to +122°F)

FINISH - LSI's DuraGrip® polyester powder coat finishing process withstands extreme weather changes without cracking or peeling. Guaranteed for five full years.

DECAL STRIPING - Optional color-coordinated decals in 9 standard colors to accent the fixture. Decals are guaranteed for five years against peeling, cracking, or fading.

WARRANTY - LSI LED fixtures carry a limited 5-year warranty.

PHOTOMETRICS - Application layouts are available upon request. Contact LSI Applications Group at lighting.apps@lsi-industries.com

SHIPPING WEIGHT (in carton) - 31 lbs./14Kg

LISTING - ETL listed to ANSI/UL 1598. UL8750 and other U.S. and international safety standards. Suitable for wet locations in downlight position.

LIGHT OUTPUT - XGBWM3

	Milliamps	# of LEDs	Type FT	Type WT	Type WW	Watts
Cool White	350 mA	28	2876	2902	3032	34
Cool White	350 mA	48	4855	4931	5038	55
Cool White	450 mA	28	3522	3542	3720	44
Cool White	450 mA	48	5900	5972	6115	72
Neutral White	350 mA	28	2787	2792	2898	34
Neutral White	350 mA	48	4553	4660	4580	55
Neutral White	450 mA	28	3377	3369	3517	44
Neutral White	450 mA	48	5453	5562	5452	72

(Type FT / Type WT / Type WW: Distribution/Lumens (Nominal))

This product, or selected versions of this product, meet the standards listed below. Please consult factory for your specific requirements.

American Innovation American Made — RoHS COMPLIANT — CE — Intertek wet location — ARRA Funding Compliant — IP65 — ida

Also available in traditional light sources

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SARATOGA SPRINGS CITY NOTES:

a. POST-APPROVAL ALTERATIONS TO LIGHTING PLANS OR INTENDED SUBSTITUTIONS FOR APPROVED LIGHTING EQUIPMENT SHALL BE SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL.

b. THE CITY RESERVES THE RIGHT TO CONDUCT POST-INSTALLATION INSPECTIONS TO VERIFY COMPLIANCE WITH THE CITY'S REQUIREMENTS AND APPROVED LIGHTING PLAN COMMITMENTS, AND IF DEEMED APPROPRIATE BY THE CITY, TO REQUIRE REMEDIAL ACTION AT NO EXPENSE TO THE CITY.

c. ALL EXTERIOR LIGHTING SHALL MEET IESNA FULL-CUTOFF CRITERIA UNLESS OTHERWISE APPROVED BY THE CITY.

PATRIOT SMALL

LUMINAIRE ORDERING INFORMATION

TYPICAL ORDER EXAMPLE: **PTHS 5 175 PSMH F MT MSV PCI120**

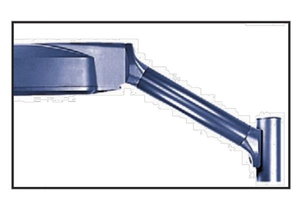
Luminaire Prefix	Distribution	Lamp Wattage	Light Source	Lens	Line Voltage	Luminaire Finish	Options
Horizontal Burn PTHS	2-Type II 3-Type III FT- Forward Throw 5 - Type V	100 150 175 250 320	PSMH - Pulse-Start Metal Halide 175, 250, 320 Watt CMH - Ceramic Metal Halide 150 Watt MH - Metal Halide 100, 150 Watt HPS - High Pressure Sodium 100, 150 Watt	F – Flat Clear Tempered Glass	480 MT – Multi Tap TT – Tri-Tap **Consult Factory for International Voltages**	BRZ – Bronze BLK – Black PLP – Platinum Plus WHT – White SVG - Satin Verde Green GPT - Graphite MSV - Metallic Silver	PCI120 – Button Type Photocell PCI208 – Button Type Photocell PCI240 – Button Type Photocell PCI277 – Button Type Photocell PCI347 – Button Type Photocell QC - Quick Connect Package [1] LL - Less Lamp

MT – Multi Tap consists of 120V, 208V, 240V and 277V and is prepared for highest voltage. Alternate voltages will require field adjustment.
TT – Tri-Tap consists of 120V, 277V and 347V and is shipped standard for Canadian applications and is prepared for highest voltage. Alternate voltages will require field adjustment.

FOOTNOTES:
1- Quick Connect option includes removable ballast tray and modular plugs. Available on 100 through 175 watt HID fixtures only.

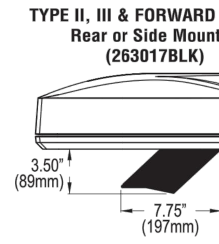
ACCESSORY ORDERING INFORMATION (Accessories are field installed)

Description	Order Number	Description	Order Number
FK120 - Single Fusing	FK120+	RPPC – Round Pole Plate	141940CLR
FK277 - Single Fusing	FK277+	BKS-BO-PTS-WM-*-CLR Wall Mount Plate	263230CLR
DFK208, 240 - Double Fusing	DFK208, 240+	BKA-BO-PTS-EC-6-CLR Extension Arm	263228CLR
DFK480 - Double Fusing	DFK480+	BKA-BO-RA-8-CLR Radius Arm	169010CLR
FK347 - Single Fusing	FK347+	BKU-BO-S-19-CLR Upsweep Bracket for round and square poles	144191CLR
PTHS PLS - Polycarbonate Sheild	263016	+Fusing must be located in the hand-hole of the pole.	
PTHS 2/3/FT HSS – External House Side Shield - rear or side mounted	263017BLK++	++ Black only.	



UPSWEEP BRACKET

HOUSE SIDE SHIELD



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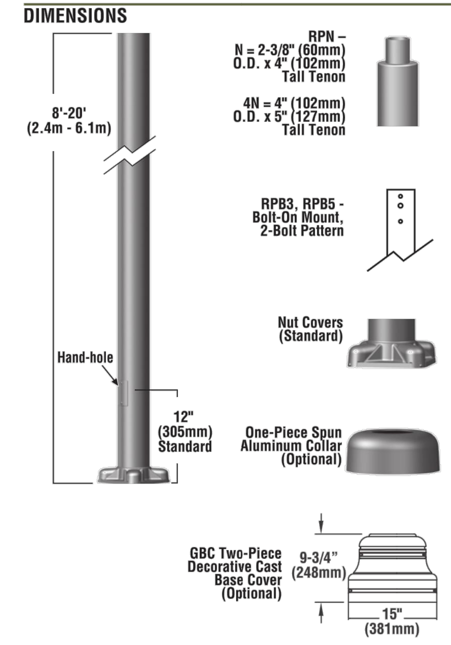
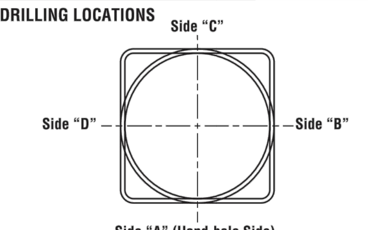
ALUMINUM ROUND POLES

DIMENSIONS



DRILLING LOCATIONS



Sides	A	B	C	D
Hand-hole	X			
Single	X			
D180°		X		X
D90°	X			X
T90°	X	X		X
TN120°*	X			
Q90°	X	X	X	X

*Other two locations will be 120° to the left and right side of A.

POLE SHAFT - The pole shaft is extruded from seamless alloy aluminum. On tenon mount poles, tenon is of high-strength pipe. Tenon N option is 2-3/8" O.D. x 4" tall. Tenon 4N option is 4" O.D. x 5" tall. Aluminum round poles are 4" and 5" in diameter.

HAND HOLE - Covered and gasketed 2" x 4" non-reinforced hand-hole is located 12" above bottom of pole base. For pole with greater EPA rating, reinforced hand hole is available as an option; consult factory. Optional festoon for GFI receptacle (with or without GFI Kit supplied) is available. Minimum height for location of festoon is 18" above standard hand hole.

BASE - Pole base is cast from 356 alloy aluminum. Completed assembly is heat-treated to a T6 temper. Aluminum nut covers are included with anchor base.

BASE COVERS - Aluminum nut covers are included with anchor base. Optional two-piece decorative die-cast aluminum (GBC) base covers or optional one-piece spun aluminum collars are available. Must be ordered separately.

ANCHOR BOLTS - Set of four anchor bolts conform to ASTM F1554 Grade 55. Each bolt is provided with two hex nuts and two flat washers. Bolts have an "L" bend on one end and are galvanized a minimum of 12" on the threaded end.

GROUND LUG - Ground lug is standard.

GROUND FAULT CIRCUIT INTERRUPTER - Ground fault circuit interrupter kit is optional. Pole Preparation (festoon) with GFI Kit must be ordered. Specify location in feet above base of pole and side orientation. Minimum height for location of festoon is 18" above standard hand hole.

FINISHES - Baked-on polyester-powder finish provides one year limited warranty.

DETERMINING THE LUMINAIRE/POLE COMBINATION FOR YOUR APPLICATION:

- Select luminaire from luminaire ordering information
- Select bracket configuration if required
- Determine EPA value from luminaire/bracket EPA chart
- Select pole height
- Select MPH to match wind speed in the application area (See windspeed map).
- Confirm pole EPA equal to or exceeding value from note above
- Confirm total luminaire/bracket weight does not exceed maximum weight shown in chart below
- Consult factory for special wind load requirements and banner brackets

POLE SELECTION CHART: 4" (102mm) and 5" (127mm) aluminum round poles

Height	EPA 70 MPH	EPA 80 MPH	EPA 90 MPH	EPA 100 MPH	Outside Dimensions	Material	Max Weight (lbs)[1]	Bolt Circle	Structure Weight (lbs)[2]
8' (2.4m)	10.7	7.9	6.0	4.7	4" (102mm)	0.125	75	E	19
10' (3.0m)	8.1	5.9	4.3	3.3	4" (102mm)	0.125	75	E	22
10' (3.0m)	15.4	11.5	8.9	7.1	5" (127mm)	0.125	100	F	27
12' (3.7m)	6.2	4.3	3.0	2.2	4" (102mm)	0.125	75	E	26
12' (3.7m)	12.2	9.0	6.9	5.5	5" (127mm)	0.125	100	F	32
12' (3.7m)	15.5	11.5	8.9	7.1	5" (127mm)	0.156	100	F	38
12' (3.7m)	18.8	14.0	10.9	8.7	5" (127mm)	0.188	100	F	45
14' (4.3m)	4.6	3.0	1.9	1.2	4" (102mm)	0.125	100	E	30
14' (4.3m)	9.7	6.9	5.3	4.1	5" (127mm)	0.125	100	F	36
14' (4.3m)	12.5	9.1	7.0	5.5	5" (127mm)	0.156	100	F	44
14' (4.3m)	15.3	11.2	8.7	6.9	5" (127mm)	0.188	100	F	52
16' (4.9m)	3.2	1.9	1.0	0.5	4" (102mm)	0.125	100	E	33
16' (4.9m)	7.4	5.1	3.8	3.0	5" (127mm)	0.125	100	F	41
16' (4.9m)	9.8	6.9	5.3	4.1	5" (127mm)	0.156	100	F	50
16' (4.9m)	12.2	8.7	6.7	5.3	5" (127mm)	0.188	100	F	58
18' (5.5m)	5.6	3.7	2.7	2.0	5" (127mm)	0.125	100	F	45
18' (5.5m)	7.7	5.2	3.9	3.0	5" (127mm)	0.156	100	F	55
18' (5.5m)	9.7	6.8	5.1	4.0	5" (127mm)	0.188	100	F	65
20' (6.1m)	4.1	2.4	1.7	1.2	5" (127mm)	0.125	100	F	50
20' (6.1m)	5.9	3.8	2.8	2.0	5" (127mm)	0.156	100	F	61
20' (6.1m)	7.6	5.2	3.8	2.9	5" (127mm)	0.188	100	F	72

EPA based on AASHTO LTS-3-94. For applications in Canada, areas using code requirements other than AASHTO LTS-3-94, and for banner brackets, consult factory. Designs are limited to top-mounted and side-mount luminaires. Variations from sizes above are available, consult factory. Satisfactory performance of poles is dependent upon the pole being properly attached to a supporting foundation of adequate design. Refer to EPA information on next page. Maximum luminaire/bracket weight is shown on the above chart.
1- Maximum weight of fixtures/brackets to be mounted to pole.
2- Structure weight is a nominal value which includes the pole shaft and base plate.

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LED GREENBRIAR® WALL SCONCE (XGBWM3)

Crossover® LED LIGHTING TECHNOLOGY

LUMINAIRE ORDERING INFORMATION

TYPICAL ORDER EXAMPLE: **XGBWM3 FT LED 48 450 CW UE WHT BB**

Prefix	Distribution	Light Source	# of LEDs	Drive Current	Color Temperature	Input Voltage	Finish	Options
XGBWM3 - LED Greenbriar Wall Sconce	WT - Wide Throw FT- Forward Throw WW - Wall Wash	LED	28 48	350 - 350mA 450 - 450mA	CW - Cool White NW - Neutral White	UE - Universal Voltage (120-277) 347-480	BLK - Black BRZ - Bronze GPT - Graphite MSV - Metallic Silver PLP - Platinum Plus SVG - Satin Verde Green WHT - White	BB - Battery Back-up[1] CWBB - Cold Weather Battery Back-up[1] IMS - Integral Motion Sensor PCI120 - 120V Button Type Photocell PCI208 - 208V Button Type Photocell PCI240 - 240V Button Type Photocell PCI277 - 277V Button Type Photocell PCI347 - 347V Button Type Photocell XPMA - Pole Mount Adaptor for use with Square Pole (for single or D180 mounting configuration only)[2] XPMAR4 - Pole Mount Adaptor w/fixture backplate for use with 4" O.D. round poles[2] XPMAR5 - Pole Mount Adaptor w/fixture backplate for use with 5" O.D. round poles[2] TP - Tamper Proof[3] **Color Decals** 45 - Light Gold Metallic, 55 - Black, 20 - Charcoal Metallic, 50 - White, 94 - Blue Metallic, 51 - Dark Red, 21 - Tomato Red, 59 - Dark Green, 700 - Aztec Silver Metallic

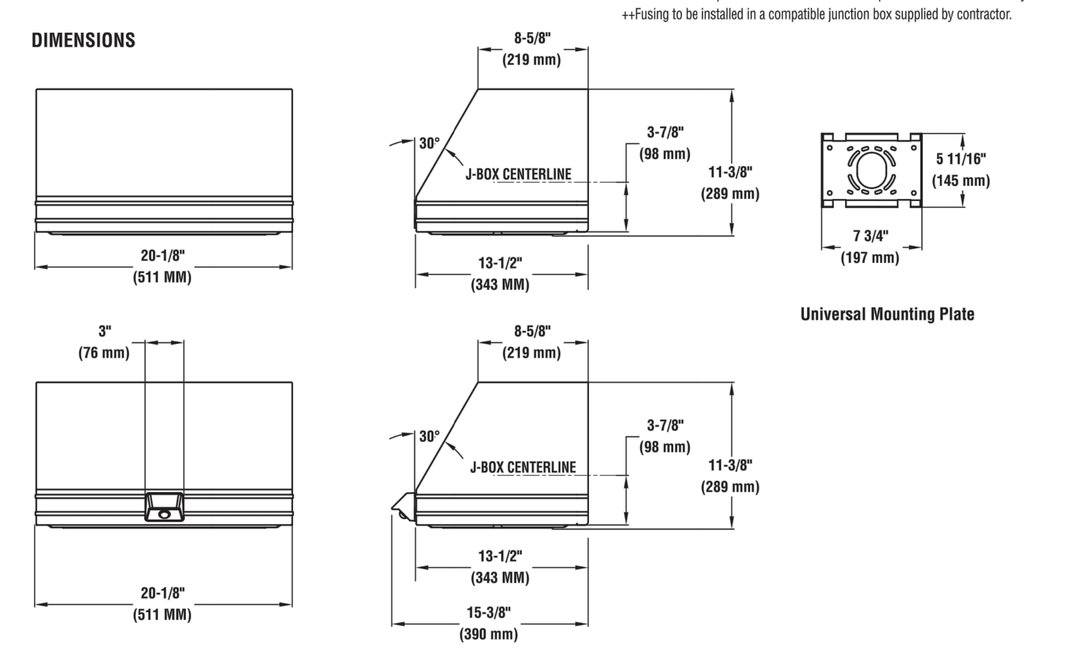
NOTES:
1 - Available with UE voltage only
2- Designed with 3" reduced drilling pattern. For S or D180 mounting configuration only.
3- Tamper-proof Screwdriver must be ordered separately. (See Accessory Ordering Information.)

ACCESSORY ORDERING INFORMATION (Accessories are field installed)

Description	Order Number
XGBWM3 PLS - Polycarbonate Shield	172787
XGBWM3 SW BLK - Surface Wiring Box	173156BLK+
SCD - Tamper-proof Screwdriver	477974
FK120 - Single Fusing	FK120++
FK277 - Single Fusing	FK277++
DFK208, 240 - Double Fusing	DFK208,240++
DFK480 - Double Fusing	DFK480++
FK347 - Single Fusing	FK347++

NOTES:
+SW BLK not compatible with XPMA or XPMAR option. Available in black only.
++Fusing to be installed in a compatible junction box supplied by contractor.

DIMENSIONS



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REVISIONS | BY

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3520 NORTH UNIVERSITY AVENUE SUITE #200 PROVO UT 84604 PHONE 801 377-6303

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